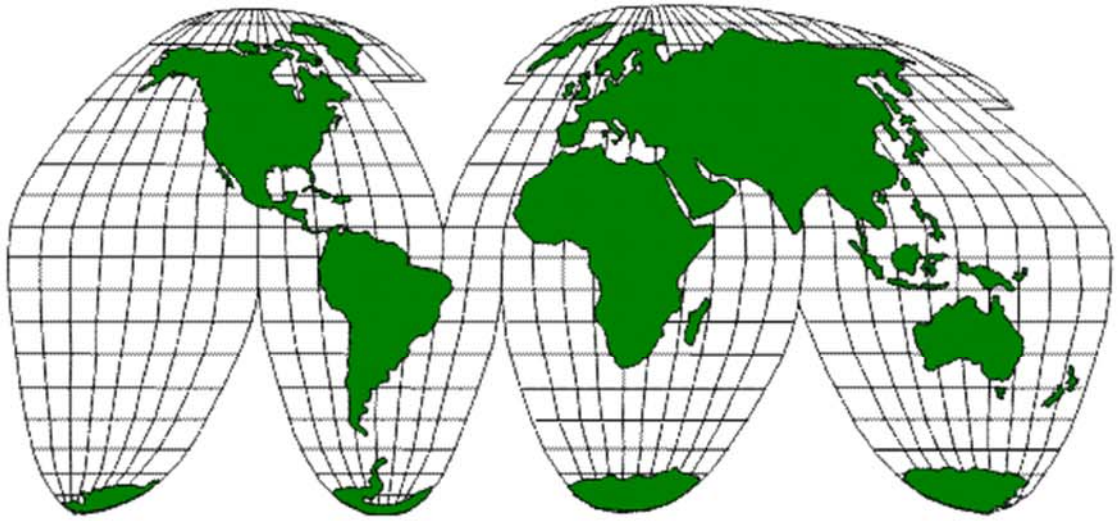
DEFENSE HEALTH PROGRAM



Fiscal Year (FY) 2021 Budget Estimates

OPERATION AND MAINTENANCE
PROCUREMENT
RESEARCH, DEVELOPMENT, TEST AND EVALUATION

Volume 1: Justification Estimates
Volume 2: Data Book

February 2020

The Defense Health Program spans the globe in support of the Department of Defense's most important resource--active and retired military members and their families.

Preparation of the Defense-Wide budget excluding revolving funds, cost the Department of Defense a total of approximately $1,220,000 in FY 2020

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Volume I – Justification of O&M Estimates for Fiscal Year (FY) 2021

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($ in Millions)

Appropriation Summary:	FY 2019[1] Actuals	Price Growth	Program Growth	FY 2020[2] Estimate	Price Growth	Program Growth	FY 2021[3] Estimate
Operation & Maintenance[4]	31,506.4	1,046.2	-452.7	32,099.9	923.8	-1,674.2	31,349.6
RDT&E	2,153.4	38.7	113.9	2,306.1	14.6	-1,597.8	722.9
Procurement	520.5	11.9	-86.0	446.4	12.7	158.9	617.9
Total, DHP	**34,180.3**	**1,096.8**	**-424.8**	**34,852.4**	**951.1**	**-3,113.1**	**32,690.4**
MERHCF Receipts	10,653.1			10,679.5			11,061.4
Total Health Care Costs	**44,833.4**			**45,531.9**			**43,751.8**

1/ FY 2019 actuals includes $349.421 million for OCO and excludes funds transferred to VA for Lovell FHCC and the Joint Incentive Fund ($128 million).

2/ FY 2020 estimate excludes $347.746 million for OCO, and includes both $126.865 million for transfer to VA for Lovell FHCC and $15 million for transfer to Joint Incentive Fund. FY 2019 O&M Actual amount includes adjustment of +$9.213 for Foreign Currency and FY 2020 O&M Estimate includes adjustment of -$3.559 for Foreign Currency.

3/ FY 2021 request excludes $365.098 million for OCO and includes $130.404 million for transfer to VA for Lovell FHCC and $15 million for transfer to Joint Incentive Fund.

4/ Reflects DoD Medicare-Eligible Retiree Health Care Fund (MERHCF) O&M transfer Receipts for FY 2019, FY 2020 and FY 2021 that support 2.5 million Medicare-eligible retirees and their family members.

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Description of Operations Financed:

The Defense Health Program (DHP) Operation and Maintenance (O&M) appropriation funding provides for worldwide medical and dental services to active forces and other eligible beneficiaries, veterinary services, occupational and industrial health care, specialized services for the training of medical personnel, and medical command headquarters. The Military Health System (MHS) provides care in government owned and operated medical treatment facilities focused on sustaining readiness of the medical force and the medical readiness of deployable forces. Additionally, the MHS purchases more than 65 percent of the total care provided for beneficiaries through tailored contracts, such as Managed Care Support Contracts responsible for the administration of the TRICARE benefit. The DoD Medicare Eligible Retiree Health Care Fund (MERHCF) is an accrual fund to pay for DoD's share of applicable Direct Care and Private Sector Care operation and maintenance health care costs for Medicare-eligible retirees, retiree family members and survivors.

Directed in the National Defense Authorization Act (NDAA) for Fiscal Years 2017 and 2019, the MHS is undergoing its most significant transformation in decades. The reforms set forth in the NDAA change the structure of the health care benefit and the management of the MHS. Centralization for the management and administration of the Military Treatment Facilities (MTFs) under the Defense Health Agency (DHA) transform the MHS into an integrated readiness and health system, eliminate redundancies, and create a common high quality experience for our beneficiaries. The FY 2021 Budget demonstrates continued efforts focused on aligning resources to the Department's readiness priorities and internal business process improvements and structural changes to find greater efficiencies, such as further integrating the military health system; continuing the deployment of MHS GENESIS – DoD's new electronic health record; implementing the health benefit reforms authorized by Congress; modernizing clinical and business processes; and, streamlining internal operations.

The FY 2021 President's Budget reflects the Department's continued efforts to re-scope the military medical end strength portfolio. The manner in which we ensure both a medically ready force and a ready medical force has evolved significantly over the past decade. As such, the Department is driving a corresponding reform effort to evolve its approach to how it allocates and

clinically diversifies the medical military end strength. The FY 2020 Budget presented the Department's estimate of the military medical manpower required to the National Defense Strategy and the FY 2021 President's Budget request incorporates a phased conversion of military end-strength based on mitigations strategies and market analysis. In some cases, the care will remain in the MTFs and be provided by civilian or contract staff and, where feasible, some care will be transitioned to a local network provider. As efforts are ongoing, the Department will continue to evaluate the impacts of the force structure changes and adjust its plans accordingly throughout the transition period. This agile and phased approach helps the Department to ensure all beneficiaries continue to receive safe, high quality care and while it pursues a more orderly implementation of these transitions in the military medical force structure.

In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, the Defense Health Program has transferred the Service Medical Readiness activities which occur outside of the Military Treatment Facility to the Military Departments. This transfer allows the medical force structure to meet the operational requirements in support of the National Defense Strategy and support the Congressionally-mandated reforms to the Military Health System. The transfer Medical Readiness programs have been identified as functions that would be more effectively and efficiently run by the Military Departments and support development of a Ready Medical Force and will not have an adverse impact to the delivery of healthcare in the Military Treatment Facilities.

In early 2017, the Defense Health Agency (DHA) began preparing to assume responsibility for the administration and management of Military Treatment Facilities (MTFs) and Dental Treatment Facilities (DTFs) worldwide. The assumption of these responsibilities commenced on October 1, 2018 with the transition of 31 facilities scattered throughout the south eastern portion of the United States. All other MTFs/DTFs in the United States transitioned in October 2019 to DHA oversight and management with support from the Military Departments as the DHA continues to build its management system's capacity. The Military Department support is scheduled to end in October 2020 and will be transitioned on a conditions-based approach to ensure that healthcare delivery and readiness is not impacted. The second phase, executing in FY 2021, will transition

additional MTFs located overseas to the management control of the DHA with a target of DHA having full control of all MTFs and Dental treatment facilities by October 2022.

Private Sector Care continues to be a vital part of the Military Health System in FY 2021 and represents roughly half of the Operations and Maintenance requirement. Over the period of FY 2012 to FY 2018, both private health insurance premiums and National Health Expenditures per capita rose 25% (or 3.7% annually). The Private Sector Care budget should have continued to rise but the Department, with concurrence from Congress, instituted a series of initiatives that bent the cost curve. A combination of benefit changes, payment savings initiatives, contract changes, and population reductions masked underlying increases in health care costs which would have been $3.5 billion higher than actual execution. The vast majority of the increase seen in FY 2019 was related to normal price inflation, an increase in beneficiaries, new benefits (e.g., urgent care with no referral), and a small increase in utilization of some services. These trends continue in FY 2020. As multiple reform efforts continue within the Military Health System, Private Sector Care will continue to represent an important part of the overall health system in FY 2021.

The DoD and the Department of Veteran's Affairs continues to progress in the establishment of the unified Electronic Health Record. In FY 2021, DoD continues funding the clinical application, HealtheIntent, which provides a platform for population health and analytic tools, and offers a seamless longitudinal record between the DoD and VA that will grant providers and beneficiaries access to the detailed medical history.

The FY 2021 budget continues the deployment of MHS GENESIS, the Department's Electronic Health Record. The FY 2021 expansion to Wave PENDLETON, Wave SAN DIEGO, Wave BLISS, Wave CARSON, and Wave TRIPLER is based on the DoD Healthcare Management System Modernization Program (DHMSM) Program Executive Office's (PEO) updated deployment schedule and incorporates lessons learned from initial deployments in the Pacific Northwest and Wave TRAVIS. In addition the following waves will begin pre-deployment activities in FY 2021, Wave SAAMC, Wave LACKLAND, Wave WRIGHT-PATTERSON, and Wave DRUM. Additional enhancements to MHS GENESIS will provide expanded analytics and data modeling; decision-support, integrated patient level accounting and billing functionality, and advanced prognostic competencies.

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The DHP appropriation funds the Research, Development, Test and Evaluation (RDT&E) program developed in response to the needs of the National Defense Strategy and Joint Capabilities Integration and Development System (JCIDS). The goal is to advance the state of medical science in those areas of most pressing need and relevance to today's battlefield experience and emerging threats. The objectives are to discover and explore innovative approaches to protect, support, and advance the health and welfare of military personnel and individuals eligible for care in the MHS; to accelerate the transition of medical technologies into deployed products; and to accelerate the translation of advances in knowledge into new standards of care for injury prevention, treatment of casualties, rehabilitation, and training systems that can be applied in theater or in military medical treatment facilities.

The DHP appropriation Procurement program funds acquisition of capital equipment in MTFs and other selected health care activities which include equipment for initial outfitting of newly constructed, expanded, or modernized health care facilities; equipment for modernization and replacement of uneconomically reparable items; and MHS information technology (IT) requirements.

Narrative Explanation of FY 2020 and FY 2021 Operation and Maintenance (O&M) Changes:

The DHP O&M funding reflects an overall decrease of $750.4 million between FY 2020 and FY 2021, consisting of $923.8 million in price growth and a net program decrease of $1,674.2 million. Program increases include:

- $334.6 million required to fund civilian full-time equivalents (FTEs) enabling the department to redirect uniformed manpower toward more direct warfighting functions while continuing to meet healthcare standards for timely access for beneficiaries
- $124.5 million increase for Military Treatment Facilities (MTFs) Information Management/Information Technology (IM/IT) and Defense Health Agency IT Infrastructure ongoing operating costs ensuring continued operations of 23 critical clinical, readiness, and business

IM/IT systems, and provides for needed hardware/software enhancements necessary for ongoing patient care and IM/IT infrastructure sustainment

- $122.4 million supports ready Medical Force, education and training for Medical Center of Excellence, Hospital Corpsman Strength and Conditioning Training, Hospital Trauma Training, and Holistic Health a Fitness programs
- $63.4 million supports 637 Army civilian full-time equivalents used to support healthcare delivery requirements in the areas of Pain Management, Traumatic Brain Injury, and Soldier Center Medical Home (SCMH); funding is needed in order to properly align program to requirements as an effort to meet civilian staffing requirements
- $37.9 million supports increased funding to Defense Healthcare Management System Modernization (DHMSM) program element to continue initial operating capabilities of the deployment of the MHS GENESIS Electronic Health Record (EHR) and requirements for Cerner Clinical Application Services (CAS)
- $32.8 million supports a robust currency platform at the 99th Medical Group, Nellis Air Force Base, Nevada, allowing all assigned Active Duty Medics to treat trauma patients and obtain skills and experience needed for deployment readiness
- $31.3 million for Natural Disaster Recovery to restore medical facilities for damages related to the consequences of Hurricanes Michael and Florence and flooding and earthquakes occurring in Fiscal Year 2019
- $30.7 million required to fund embedded mental health and physical therapist providers in support of the National Defense Strategy priorities to restore readiness and create a more resilient force
- $21.4 million to improve oversight of resources and effectiveness of audit readiness program and increased operational requirements for single accounting system phased implementation within the Military Health System (MHS)
- $17.6 million supports the transfer of the Office of General Counsel, Operation Live Well-Healthy Base Initiative (OLW), USSOCOM Embedded Behavioral Health, and Veterinary Service Information Management System (VSIMS) transfers to the Defense Health Agency (DHA)
- $17.2 million continues incremental funding to develop and sustain field operation medical capabilities for Joint Operational Medicine Information System (JOMIS) and continues funding

Information Technology (IT) contract services to implement cost effective Legacy Data Repository platform

- $10.1 million required to fund the incremental increase for the expansion of the Military Health System (MHS) Virtual Health Program, which synchronizes, standardizes, and coordinates virtual medical services across the Department of Defense that support remote, clinical, operational and garrison forces

Program **decreases** include:

- $1,831.9 million transfer of Air Force, Army, and Navy Readiness funding from Defense Health Agency (DHA) to the Service Military Departments (MILDEPs) in accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020. This transfer allows the medical force structure to meet the operational capabilities in support of the National Defense Strategy and support the Congressionally-mandated reforms to the Military Health System
- $196.9 million reduces funding for the Desktop to Datacenter (D2D) program to the appropriate operating costs levels to resource the design, build, testing, installation, fielding, upgrades and sustainment of information technology (IT) supporting the DoD's ability to provide and maintain infrastructure and enterprise support services for Military Health System (MHS) centrally managed IT systems in all managed health care regions worldwide
- $166.2 million continues the implementation of the Military Health System organizational reforms required by the National Defense Authorization Acts of FY 2017 and FY 2019 focused on efforts to reduce redundant and unnecessary headquarters overhead while building a structure that drives improved outcomes for readiness, health, quality and cost
- $108.5 million realigns Theater Medical Information Program-Joint (TMIP-J) and Joint Operational Medicine Information Systems (JOIMS) funds from Information Management/Information Technology to establish the Software & Digital Technology Budget Activity in the Research, Development, Test & Evaluation (RDT&E) appropriation allowing software capability delivery to be funded as a single budget line item, with no separation between RDT&E, production and sustainment
- $44.4 million supports reduced requirements based on incorporation of the FY 2019 actual execution into the FY 2021 budget estimate for contract requirements; incorporating this

analysis into budgetary projections combined with better pricing methodologies, and a review of historical deobligation trends resulted in improved requirement identification and resource management

- $39.5 million decrease in resources for facilities operations and facilities restoration and modernization funding places investment focus on patient care facilities; reducing project change orders through improving upfront planning of facility projects and seek opportunities to reduce overall footprint with no impact to beneficiary utilization at MHS healthcare facilities
- $36.3 million reduces funding associated with USD(P&R)'s implementation of a proposal to downsize 50 Medical Treatment Facilities
- $25.6 million supports reduced pharmaceutical requirements in order to better align actual budget execution and the incremental reduction to pharmacy requirements for revisions to the Co-Pay tables for various drug categories offered under TRICARE Pharmacy benefits structure
- $24.2 million incorporates program changes based on projected change in population mix for Active Duty, Active Duty Family Member, Retiree and Retiree Family Member
- $22.7 million supports reduced civilian pay to account for one fewer paid day in FY 2021 (261 paid days) than in FY 2020 (262 paid days)
- $7.2 million decreases Cybersecurity program element funding to the appropriate operating costs levels to resource the design, build, fielding, development, refresh and sustainment of information technology supporting the DoD's ability to maintain an appropriate level of confidentiality, integrity, authentication, non-repudiation and network availability
- $6.7 million supports continued improvements of metering of utility services combined and reduces rental costs for discontinued occupancy in leased spaces
- $6.7 million transfer of Army and Air Force from Defense Health Agency (DHA) to the Service Military Departments (MILDEPs) to correctly align resources for positions transferred in FY 2019 Program Decision Memorandum and Military Health System reform initiatives
- $1.3 million supports reduced funding based upon a projected decrease in workload the Department of Defense share for the James A. Lovell Health Care Center Department of Defense-Department of Veterans Affairs Medical Facility Joint Demonstration Fund.

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Continuing in FY 2021, the Department projects that up to $130.4 million should transfer to the Joint DoD -VA Medical Facility Demonstration Fund established by section 1704 of Public Law 111-84, (National Defense Authorization Act for FY 2010). This fund combines the resources of DoD and VA to operate the first totally integrated Federal Health Care Center in the country by the total integration of the North Chicago VA Medical Center and the Navy Health Clinic Great Lakes, IL.

Continuing in FY 2021, the Department will transfer $15 million to the DoD-VA Health Care Joint Incentive Fund (JIF). Authority for the JIF is established by Section 8111, Title 38, of the United States Code (USC) and Section 721 of Public Law 107-314(National Defense Authorization Act for 2003. This fund combines the resources of the DoD and VA to implement, fund, and evaluate creative coordination and sharing initiatives at the facility, intraregional, and nationwide levels.

Narrative Explanation of FY 2020 and FY 2021 Research Development Test & Evaluation (RDT&E) Changes:

The DHP RDT&E Program reflects a net decrease of $1,583.2 million between FY 2020 and FY 2021. This includes a price growth of $14.6 million and a program decrease of $1,597.8 million.

Program **increases** include:

- $160.4 million increase associated with the realignment of the Joint Operational Medicine Information Systems (JOMIS)and Theater Medical Information Program – Joint (TMIP-J) funding from O&M, Procurement and RDT&E separate funding lines to establish the singular Software & Digital Technology Budget Activity within the Research, Development, Test & Evaluation (RDT&E) appropriation. The creation of the new Software & Digital Technology appropriations allows software capability delivery to be funded as a single budget line item, with no separation between RDT&E, production and sustainment.

Program **decreases** include:

- $1,573.8 million in FY 2020 one-time Congressional adjustments to include congressional special interest items and rescissions to DoD Healthcare Management System Modernization (DHMSM) and to JOMIS.
- $67.2 million decrease associated with the decrease and transfer of the Army RDT&E Programs from the DHP to the Army Line for readiness activities.
- $49.3 million decrease based on the realignment of the Joint Operational Medicine Information Systems (JOMIS) PE (PE 0605045DHA) to establish the Software & Digital Technology Budget Activity PE (PE 0608045DHA). The creation of the new Software & Digital Technology project allows software capability delivery to be funded as a single budget line item, with no separation between RDT&E, production and sustainment.
- $20.0 million decrease to the DoD Healthcare Management System Modernization (DHMSM) Program as the life cycle management and acquisition schedule ramps down. Activities supporting test planning and configuration effort support are reaching final stages and starting to shift towards supporting procurement and O&M.
- $16.1 million decrease associated with scaling back joint Guidance for Development of the Force efforts in various medical technology development areas to include military operational medicine, military infectious diseases, and combat casualty care.
- $14.5 million decrease associated with the elimination of the In-house Laboratory Independent Research (ILIR) program and scaled back efforts in cardiac research, pain research, health services research, precision medicine, and research in transforming technology for the warfighter.
- $14.5 million decrease to the MHS Financial Acquisition (GFEBS) program as deployment requirements for the Navy go down and shift towards the operation and maintenance. This program may increase in later years pending potential GFEBS deployment to AF and acceleration in existing acquisitions.
- $2.0 million decrease in miscellaneous adjustments.
- $0.8 million decrease associated with the realignment of funding from RDT&E to O&M in support of the Veterinary Services Information Management System (VSIMS).

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Narrative Explanation of FY 2020 and FY 2021 Procurement Changes:

The DHP Procurement Program has a net increase of $174.2 million between FY 2020 and FY 2021. This includes price growth of $12.7 million and a net program increase of $158.9 million. Program **increases** include:

- $176.8 million increase to DoD Healthcare Management System Modernization (DHMSM) for the planned purchase of commercial software licenses and multiple deployments of the modernized Electronic Health Record (EHR) to the military treatment facilities (MTFs). Deployment activities include site visits, localized configuration, and on-site deployment support during fielding Waves 1 through 6.
- $3.9 million increase to the Initial Outfitting & Transition (IO&T) program to meet military construction projects' schedules for equipment outfitting in accordance procurement thresholds
- $2.7 million increase in support of Health Artifact and Image Management Solution (HAIMS) licensing, training and transition costs associated with moving software to OpenText to achieve maintenance cost savings.
- $1.4 million increase for Defense Medical Logistics-Enterprise Solution (DML-ES) hardware upgrade and storage purchases planned for FY 2021.

Program **decreases** include:

- $17.8 million decrease in reduced radiology equipment modernization requirements for FY 2021
- $3.5 million decrease for MHS Desktop to Datacenter (D2D) due to planned completion of Medical Community of Interest (MEDCOI) Gateway technical refreshes in FY 2020, as well as completion of preparatory work providing the appropriate equipment to transition and migrate all Army, Navy, and Air Force primary sites to the DHA Cyber Security Service Provider in FY 2020
- $2.6 million decrease based on the realignment of the Joint Operational Medicine Information Systems (JOMIS) procurement funds to establish the Software & Digital Technology Budget Activity in the Research, Development, Test & Evaluation (RDT&E) appropriation. The creation of the new Software & Digital Technology appropriations allows software capability delivery to

be funded as a single budget line item, with no separation between RDT&E, production and sustainment.

- $2.0 million decrease for the Military Health System (MHS) Virtual Health Program (VHP) due to a one-time add in FY 2019 to support hardware for additional locations, expanded storage capacity, and potential cloud computing expansion for enhanced capacity in order to comply with NDAA 2017, Section 718 as well as combatant commanders' requirements

President's Management Plan – Performance Metrics Requirements:

The Military Health System (MHS) continues to refine existing performance measures and develop specific criteria to determine and measure outputs/outcomes as compared with initial goals. The Quadruple Aim provides a focused and balanced approach to overall performance. This approach includes not only production but outcome measures related to medical readiness, a healthy population, positive patient experiences and the responsible management of health care costs.

- **Individual Medical Readiness** – This measure provides operational commanders, Military Department leaders and primary care managers use this measure to monitor the medical readiness status of their personnel, ensuring a healthy and fit fighting force medically ready to deploy. This represents the best-available indicator of the medical readiness of the Total Force (Active Component and Reserve Component) prior to deployment.

- **Beneficiary Satisfaction with Health Plan** – Satisfaction is measured using a standard survey instrument comparable to those used by civilian plans. The goal is to improve MHS beneficiary overall satisfaction with TRICARE to a level at or above benchmark satisfaction with civilian plans utilizing the Consumer Assessment of Healthcare Providers and Systems survey. Increasing satisfaction with the Health Plan indicates that actions being taken are improving the overall functioning of the health plan from the beneficiary perspective.

- **Medical Cost Per Member Per Year** – This measure focuses on the annual overall cost growth for the Prime enrollees and includes all costs related to health care delivered to

enrollees. The objective is to keep the rate of cost growth for the TRICARE Prime enrollees to a level at or below the increases for the Civilian health care plans at the national level. Currently the measure provides insight to issues regarding unit cost, utilization management, and Purchased care management. The metric has been enhanced to properly account for differences in population demographics and health care requirements of the enrolled population. Since enrollment demographics can vary significantly by Service, and across time, it is important to adjust the measure. For example, as increasing numbers of older individuals enroll, the overall average medical expense per enrollee would likely increase. Conversely, as younger, healthy active duty enroll, the overall average would likely decrease. Through the use of adjustment factors, a comparison across Services and across time is made more meaningful.

Output related measures that influence Medical Cost Per Member Per Year:

- **Inpatient Production Target** (Medicare Severity Adjusted Relative Weighted Products, referred to as MS-RWPs) – Achieving the production targets ensures that the initial plan for allocation of personnel and resources are used appropriately in the production of inpatient workload.
- **Outpatient Production Target** (Relative Value Units, referred to as RVUs) – Achieving the production targets ensures that the initial plans for allocation of personnel and resources are used appropriately in the production of outpatient workload.

Below is reporting for FY 2019 performance measures related to the Quadruple Aim, and two output measures related to production plan targets. The overall success of each measured is discussed below:

- **Individual Medical Readiness** – The Military Health System achieved the goal for the Total Force Medical Readiness as of FY 2019 4th quarter reporting with a score of 86.7 percent compared to the goal of 85 percent. This represents the fifth year in a row that the MHS has surpassed the performance goal for the measure.

- **Beneficiary Satisfaction with Health Plan** – Satisfaction with Health Care Plan performance for FY 2019 was 62%, which exceeded the goal of 57 percent based on CAHPS for the fiscal year. Satisfaction levels met or exceeded the goal for all beneficiary categories and enrollment status. This has been a continuous process to maintain and improve performance to levels comparable with the civilian sector, and performance must be maintained. Major performance drivers for this measure are related to claims processing timeliness, interaction during health care encounter, and access to health care.

- **NOTE: Due to the deployment of MHS GENESIS, sites in the Puget Sound Enhanced Multi-Service Market Area are excluded from the following three measures and the goals have been adjusted accordingly for the two production measures related to Inpatient and Outpatient Care.**

- **Medical Cost Per Member Per Year – Annual Cost Growth** – The Year to Date performance estimate for FY 2019 is 2.2 percent vs goal of 4.5 percent. While final claims data is still completing, the system currently is achieving the goal during the fiscal year. Overall the growth rate is well below historical levels, and may increase as medical claims data are finalized.

- **Inpatient Production Target** (MS-RWPs) – Based on workload reported through the 4th fiscal quarter of FY 2019, the MHS produced 167 thousand MS-RWPs, slightly below the annual adjusted target of 172 thousand MS-RWPs. These numbers are based on the records reported to date, and should increase slightly as all records are completed.

- **Outpatient Production Target** (RVUs) – Based on workload reported through the 4th fiscal quarter of FY 2019, the MHS produced 73.4 million relative value units which is below the annual adjusted goal of 75.2 million. Provider and support staff shortages throughout the Services are a significant reason for the decrease, with the San Diego market workload decreasing 4%. Additionally, decreases of MTF Prime enrollment also occurred, that reduces the number of individuals normally seen at the MTFs.

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(Dollars in Thousands)

0130D Defense Health Program			FY 2019[1/]	FY 2020[2/] Enacted			FY 2021 Request				
			Base + OCO	Base	OCO	Total (Base + OCO)	Base	OCO for Base Requirements	OCO for Direct War and Enduring Costs	Total OCO	Total (Base + OCO)
BUDGET ACTIVITY 01: OPERATION & MAINTENANCE											
0130D	010	In-House Care	9,274,512	9,281,856	57,459	9,339,315	9,560,564		65,072	65,072	9,625,636
0130D	020	Private Sector Care	15,206,286	14,975,181	287,487	15,262,668	15,841,887		296,828	296,828	16,138,715
0130D	030	Consolidated Health Support	1,906,418	1,941,936	2,800	1,944,736	1,338,269		3,198	3,198	1,341,467
0130D	040	Information Management	2,184,136	1,956,738		1,956,738	2,039,910			0	2,039,910
0130D	050	Management Activities	310,478	330,246		330,246	330,627			0	330,627
0130D	060	Education and Training	745,629	750,860		750,860	315,691			0	315,691
0130D	070	Base Operations/Communications	1,869,748	2,091,289		2,091,289	1,922,605			0	1,922,605
		TOTAL, BA 01: OPERATION & MAINTENANCE	**31,497,207**	**31,328,106**	**347,746**	**31,675,852**	**31,349,553**	**0**	**365,098**	**365,098**	**31,714,651**
BUDGET ACTIVITY 02: RDT&E											
0130D		DEFENSE HEALTH PROGRAM	2,153,421	2,306,095	0	2,306,095	562,465	0	0	0	562,465
		TOTAL, BA 02: RDT&E	**2,153,421**	**2,306,095**	**0**	**2,306,095**	**562,465**	**0**	**0**	**0**	**562,465**
BUDGET ACTIVITY 08: SOFTWARE & DIGITAL TECHNOLOGY PILOT PROGRAM											
0130D		DEFENSE HEALTH PROGRAM	0	0	0	0	160,428	0	0	0	160,428
		TOTAL, BA 08: S&DTPP	**0**	**0**	**0**	**0**	**160,428**	**0**	**0**	**0**	**160,428**
BUDGET ACTIVITY 03: PROCUREMENT											
0130D		DEFENSE HEALTH PROGRAM	520,459	446,359	0	446,359	617,926	0	0	0	617,926
		TOTAL, BA 03: PROCUREMENT	**520,459**	**446,359**	**0**	**446,359**	**617,926**	**0**	**0**	**0**	**617,926**
		Total Defense Health Program	**34,171,087**	**34,080,560**	**347,746**	**34,428,306**	**32,690,372**	**0**	**365,098**	**365,098**	**33,055,470**

1/ FY 2019 includes OCO funding of $349.4 million and Fisher House of $10.0 million

2/ FY 2020 reflects enactment and includes funding for transfers to FHCC ($127.0 million) and JIF ($15.0 million). Also includes -$3.6 million adjustment for foreign currency.

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Summary of Price and Program Growth

		FY 2019 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2020 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2021 Program
	Civ Compensation											
101	Exec, Gen'l & Spec Scheds	6,184,829	0	2.78%	171,940	-269,630	6,087,139	0	1.54%	93,743	-315,482	5,865,400
103	Wage Board	125,632	0	2.78%	3,492	-10,164	118,960	0	1.54%	1,832	1,007	121,799
104	FN Direct Hire (FNDH)	29,111	0	2.78%	809	-4,700	25,220	0	1.54%	388	185	25,793
105	Separation Liability (FNDH)	1,524	0	2.76%	42	-42	1,524	0	1.57%	24	-24	1,524
107	Voluntary Sep Incentives	2,542	0	2.75%	70	-450	2,162	0	1.57%	34	-34	2,162
121	PCS Benefits	61	0	3.28%	2	-63	0	0	0.00%	0	0	0
199	**TOTAL CIV COMPENSATION**	**6,343,699**	**0**		**176,355**	**-285,049**	**6,235,005**	**0**		**96,021**	**-314,348**	**6,016,678**
	Travel											
308	Travel of Persons	222,223	0	2.00%	4,445	-33,999	192,669	0	2.00%	3,854	-65,828	130,695
399	**TOTAL TRAVEL**	**222,223**	**0**		**4,445**	**-33,999**	**192,669**	**0**		**3,854**	**-65,828**	**130,695**
	Supplies & Materials											
401	DLA Energy (Fuel Products)	3,367	0	-0.65%	-22	-20	3,325	0	-5.08%	-169	-125	3,031
402	Service Fund Fuel	184	0	-0.54%	-1	-94	89	0	-4.49%	-4	6	91
411	Army Supply	79	0	0.00%	0	-67	12	0	0.00%	0	-12	0
412	Navy Managed Supply, Matl	3,135	0	2.07%	65	-913	2,287	0	3.98%	91	-252	2,126
414	Air Force Consol Sust AG (Supply)	297	0	8.08%	24	-318	3	0	0.00%	0	0	3
416	GSA Supplies & Materials	14,389	0	2.00%	288	-3,581	11,096	0	2.00%	222	-423	10,895
417	Local Purch Supplies & Mat	66,248	0	2.00%	1,325	-7,123	60,450	0	2.00%	1,207	-23,915	37,742
422	DLA Mat Supply Chain (Medical)	41,725	0	-0.40%	-166	-20,217	21,342	0	0.14%	29	86	21,457
499	**TOTAL SUPPLIES & MATERIALS**	**129,424**	**0**		**1,513**	**-32,333**	**98,604**	**0**		**1,376**	**-24,635**	**75,345**
	Equipment Purchases											
502	Army Fund Equipment	1,927	0	-0.05%	-1	-1,310	616	0	4.06%	25	-12	629
503	Navy Fund Equipment	589	0	2.04%	12	477	1,078	0	3.99%	43	-232	889
505	Air Force Fund Equip	31,158	0	0.00%	0	-31,158	0	0	0.00%	0	0	0

Defense Health Program
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Summary of Price and Program Growth

		FY 2019 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2020 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2021 Program
506	DLA Mat Supply Chain (Const & Equip)	1,424	0	-0.49%	-7	-755	662	0	0.00%	0	13	675
507	GSA Managed Equipment	6,799	0	2.00%	136	4,113	11,048	0	2.00%	221	-132	11,137
599	**TOTAL EQUIPMENT PURCHASES**	**41,897**	**0**		**140**	**-28,633**	**13,404**	**0**		**289**	**-363**	**13,330**
	DWCF Purchases											
601	Army Industrial Operations	43	0	0.00%	0	-43	0	0	0.00%	0	0	0
611	Navy Surface Warfare Ctr	6,535	0	1.64%	107	-5,747	895	0	8.16%	73	-56	912
614	Space & Naval Warfare Center	1,745	0	1.72%	30	6,118	7,893	0	6.25%	493	-1,933	6,453
631	Navy Base Support (NFESC)	1,172	0	12.37%	145	270	1,587	0	1.76%	28	-302	1,313
633	DLA Document Services	13,795	0	0.50%	69	-11,864	2,000	0	0.65%	13	26	2,039
634	NAVFEC (Utilities and Sanitation)	23,384	0	0.00%	0	4,985	28,369	0	2.00%	567	-604	28,332
635	Navy Base Support (NAVFEC Other Support Services)	23,932	0	0.00%	0	28,329	52,261	0	2.00%	1,045	324	53,630
647	DISA Enterprise Computing Centers	3	0	0.00%	0	106,918	106,921	0	1.30%	1,390	-8,229	100,082
671	DISA DISN Subscription Services (DSS)	3,892	0	-8.61%	-335	34,588	38,145	0	4.80%	1,831	-4,314	35,662
675	DLA Disposition Services	758	0	0.00%	0	-756	2	0	0.00%	0	-1	1
677	DISA Telecomm Svcs - Reimbursable	541	0	1.85%	10	-479	72	0	0.00%	0	1	73
679	Cost Reimbursable Purchase	1,495	0	2.01%	30	-453	1,072	0	0.00%	0	11	1,083
680	Building Maint Fund Purch	0	0	0.00%	0	44,215	44,215	0	0.00%	0	-1,313	42,902
691	DFAS Financial Operations (Army)	11,659	0	-2.35%	-274	6,036	17,421	0	-3.17%	-552	901	17,770
692	DFAS Financial Operations (Navy)	5,929	0	-1.94%	-115	1,643	7,457	0	6.91%	515	-366	7,606
693	DFAS Financial Operations (Air Force)	2,856	0	-3.54%	-101	480	3,235	0	17.28%	559	-494	3,300
696	DFAS Financial Operation (Other Defense Agencies)	7,679	0	0.21%	16	-3,045	4,650	0	26.84%	1,248	3,750	9,648
699	**TOTAL DWCF PURCHASES**	**105,418**	**0**		**-418**	**211,195**	**316,195**	**0**		**7,210**	**-12,599**	**310,806**
	Transportation											

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Price and Program Growth

		FY 2019 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2020 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2021 Program
706	AMC Channel Passenger	30,139	0	2.00%	603	2,698	33,440	0	2.00%	669	-34,109	0
707	AMC Training	1,839	0	19.41%	357	-2,196	0	0	0.00%	0	0	0
719	SDDC Cargo Ops-Port hndlg	1,308	0	38.00%	497	-612	1,193	0	-26.99%	-322	325	1,196
771	Commercial Transport	14,537	0	1.99%	290	-102	14,725	0	2.00%	294	-2,214	12,805
799	**TOTAL TRANSPORTATION**	**47,823**	**0**		**1,747**	**-212**	**49,358**	**0**		**641**	**-35,998**	**14,001**
	Other Purchases											
901	Foreign National Indirect Hire (FNIH)	56,963	0	0.00%	0	3,094	60,057	0	2.00%	1,202	-16,797	44,462
912	Rental Payments to GSA (SLUC)	10,947	0	2.01%	220	10,233	21,400	0	2.00%	428	46	21,874
913	Purchased Utilities (Non-Fund)	247,709	0	2.00%	4,954	7,628	260,291	0	2.00%	5,206	-37,153	228,344
914	Purchased Communications (Non-Fund)	34,868	0	2.00%	697	19,776	55,341	0	2.00%	1,106	-1,823	54,624
915	Rents (Non-GSA)	102,558	0	2.00%	2,051	-60,127	44,482	0	2.00%	890	-5,021	40,351
917	Postal Services (U.S.P.S)	5,428	0	1.99%	108	-1,755	3,781	0	2.01%	76	-111	3,746
920	Supplies & Materials (Non-Fund)	727,880	0	3.43%	24,953	-175,888	576,945	0	3.45%	19,901	-11,677	585,169
921	Printing & Reproduction	17,009	0	1.99%	339	1,393	18,741	0	2.00%	375	2,879	21,995
922	Equipment Maintenance By Contract	233,449	0	2.00%	4,670	-65,280	172,839	0	2.00%	3,456	-12,241	164,054
923	Facilities Sust, Rest, & Mod by Contract	739,048	0	2.00%	14,781	-124,446	629,383	0	2.00%	12,587	-72,540	569,430
924	Pharmaceutical Drugs	3,277,404	0	3.80%	124,463	120,107	3,521,974	0	3.80%	133,676	-79,887	3,575,763
925	Equipment Purchases (Non-Fund)	337,630	0	3.46%	11,669	362,405	711,704	0	3.10%	22,073	-210,090	523,687
926	Other Overseas Purchases	19,999	0	2.00%	400	-20,356	43	0	2.33%	1	0	44
927	Air Def Contracts & Space Support (AF)	2,646	0	2.00%	53	-2,699	0	0	0.00%	0	0	0
930	Other Depot Maintenance (Non-Fund)	2,474	0	2.02%	50	-1,409	1,115	0	2.06%	23	-346	792
932	Mgt Prof Support Svcs	503,815	0	2.00%	10,077	-177,610	336,282	0	2.00%	6,725	-29,173	313,834
933	Studies, Analysis & Eval	111,260	0	2.00%	2,223	-63,834	49,649	0	2.00%	994	-21,447	29,196
934	Engineering & Tech Svcs	214,438	0	2.00%	4,289	-213,388	5,339	0	2.00%	107	-130	5,316

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Price and Program Growth

		FY 2019 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2020 Program	Foreign Currency Rate Diff	Price Growth Percent	Price Growth	Program Growth	FY 2021 Program
936	Training and Leadership Development (Other Contracts)	2,346	0	2.00%	47	-2,393	0	0	0.00%	0	0	0
937	Locally Purchased Fuel (Non-Fund)	2,842	0	-0.67%	-19	-187	2,636	0	2.01%	53	-195	2,494
955	Other Costs (Medical Care)	765,384	0	3.76%	28,803	-80,407	713,780	0	3.75%	26,779	-389,330	351,229
957	Other Costs (Land and Structures)	244,274	0	2.00%	4,885	218,411	467,570	0	2.00%	9,351	-85,549	391,372
959	Other Costs (Insurance Claims/Indmnties)	991	0	1.92%	19	-1,007	3	0	0.00%	0	0	3
960	Other Costs (Interest and Dividends)	2,981	0	2.01%	60	-1,552	1,489	0	2.01%	30	0	1,519
964	Other Costs (Subsistence and Support of Persons)	21,057	0	2.00%	421	-17,897	3,581	0	2.01%	72	-202	3,451
984	Equipment Contracts	144,016	0	2.00%	2,880	-146,896	0	0	0.00%	0	0	0
985	Research & Development, Contracts	15,060	0	0.00%	0	-15,060	0	0	0.00%	0	0	0
986	Medical Care Contracts	14,936,396	3,335	3.90%	582,650	-342,920	15,179,461	-3,559	3.44%	522,120	-8,358	15,689,664
987	Other Intra-Govt Purch	390,983	0	2.00%	7,820	18,030	416,833	0	2.00%	8,337	-9,791	415,379
988	Grants	46,083	0	2.00%	922	23,681	70,686	0	2.00%	1,414	-43,614	28,486
989	Other Services	457,424	5,878	2.00%	9,267	-95,847	376,722	0	2.00%	7,534	-87,371	296,885
990	IT Contract Support Services	931,359	0	2.00%	18,626	546,086	1,496,071	0	2.00%	29,923	-100,459	1,425,535
993	Other Services - Scholarships	2	0	0.00%	0	-2	0	0	0.00%	0	0	0
	TOTAL OTHER PURCHASES	**24,606,723**	**9,213**		**862,378**	**-280,116**	**25,198,198**	**-3,559**		**814,439**	**-1,220,380**	**24,788,698**
	Total	**31,497,207**	**9,213**		**1,046,160**	**-449,147**	**32,103,433**	**-3,559**		**923,830**	**-1,674,151**	**31,349,553**

Defense Health Program
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Personnel Summary

	FY 2019	FY 2020	FY 2021	Change FY 2020/2021
Active Military End Strength (E/S) (Total)	78,727	77,739	70,317	-7,422
Officer	28,547	28,824	27,495	-1,329
Enlisted	50,180	48,915	42,822	-6,093
Civilian End Strength (Total)	66,320	62,451	58,381	-4,070
U.S. Direct Hire	63,652	59,997	56,151	-3,846
Foreign National Direct Hire	1,188	981	1,001	20
Total Direct Hire	64,840	60,978	57,152	-3,826
Foreign National Indirect Hire	1,237	1,267	1,023	-244
Reimbursable Civilians	243	206	206	0
Active Military Average Strength (A/S) (Total)	78,979	78,235	74,031	-4,204
Officer	28,370	28,686	28,161	-525
Enlisted	50,609	49,549	45,870	-3,679
Civilian FTEs (Total)	62,968	60,544	56,920	-3,624
U.S. Direct Hire	60,377	58,164	54,784	-3,380
Foreign National Direct Hire	1,113	954	952	-2
Total Direct Hire	61,490	59,118	55,736	-3,382
Foreign National Indirect Hire	1,239	1,225	983	-242
Reimbursable Civilians	239	201	201	0
Average Annual Civilian Salary Cost ($ in thousands)	95.4	98.2	102.4	4.2
Contractor FTEs (Total)	29,199	23,958	23,733	-225

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Physicians' Comparability Allowance Worksheet

Physicians' Comparability Allowance (PCA) Plan

Department and component:

U.S. ARMY MEDICAL COMMAND

Purpose: The purpose of this document is to describe the agency's plan for implementing the Physicians' Comparability Allowance (PCA) program. Per 5 CFR 959.107, OMB must approve this plan prior to the agency entering into any PCA service agreement. Changes to this plan must be reviewed and approved by the Office of Management and Budget (OMB) in accordance with 5 CFR 959.107.

Reporting: In addition to the plan, each year, components utilizing PCA will include their PCA worksheet in the OMB Justification (OMBJ), typically in September. OMB and OPM will use this data for Budget development and congressional reporting.

Plan for Implementing the PCA program:

1a) Identify the categories of physician positions the agency has established are covered by PCA under § 595.103. Please include the basis for each category. If applicable, list and explain the necessity of any additional physician categories designated by your agency (for categories other than I through IV-B). List Any Additional Physician Categories Designated by Your Agency: Pursuant to 5 CFR 595.107, any additional category of physician receiving a PCA, not covered by categories I through IV-B, should be listed and accompanied by an explanation as to why these categories are necessary.

	Category of Physician Position	**Covered by Agency** (mark "x" if covered)	**Basis for Category**
Number of Physicians Receiving PCAs by Category (non-add)	Category I Clinical Position	0	
	Category II Research Position	0	***See Note below
	Category III Occupational Health	0	
	Category IV-A Disability Evaluation	0	
	Category IV-B Health and Medical Admin.	0	

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Physicians' Comparability Allowance Worksheet

Additional category (if applicable)	NONE		
			Note: MRMC/ISR moved to AMC

2) Explain the recruitment and retention problem(s) for each category of physician in your agency (this should demonstrate that a current need continues to persist). § 595 of 5CFR Ch. 1 requires that an agency may determine that a significant recruitment and retention problem exists only if all of the following conditions apply:
- Evidence indicates that the agency is unable to recruit and retain physicians for the category;
- The qualification requirements being sought do not exceed the qualifications necessary for successful performance of the work;
- The agency has made efforts to recruit and retain candidates in the category; and
- There are not a sufficient number of qualified candidates available if no comparability allowance is paid.

	Category of Physician Position	**Recruitment and retention problem**
Number of Physicians Receiving PCAs by Category (non-add)	Category I Clinical Position	
	Category II Research Position	
	Category III Occupational Health	
	Category IV-A Disability Evaluation	
	Category IV-B Health and Medical Admin.	
Additional category (if applicable)		
Additional category (if applicable)		

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Physicians' Comparability Allowance Worksheet

3) . Explain how the agency determines the amounts to be used for each category of physicians.

	Category of Physician Position	Basis of comparability allowance amount
Number of Physicians Receiving PCAs by Category (non-add)	Category I Clinical Position	
	Category II Research Position	
	Category III Occupational Health	
	Category IV-A Disability Evaluation	
	Category IV-B Health and Medical Admin.	
Additional category (if applicable)		
Additional category (if applicable)		

4) Does the agency affirm that the PCA plan is consistent with the provisions of 5 U.S.C. 5948 and the requirements of § 595 of 5CFR Ch. 1?

N/A

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Funding Increases and Decreases

	O&M	RDT&E	Procurement	DHP Total
FY 2020 President's Budget Request (Amended, if applicable)	**31,812,090**	**732,273**	**454,324**	**32,998,687**
In-House Care	9,570,615			**9,570,615**
Private Sector Care	15,041,006			**15,041,006**
Consolidated Health Support	1,975,536			**1,975,536**
Information Management	2,004,588			**2,004,588**
Management Activities	333,246			**333,246**
Education and Training	793,810			**793,810**
Base Operations/Communications	2,093,289			**2,093,289**
RDT&E		732,273		**732,273**
Procurement			454,324	**454,324**
1. Congressional Adjustments	-483,984	1,573,822	-7,965	**1,081,873**
a) Distributed Adjustments	-490,425	1,236,722	0	**746,297**
b) Undistributed Adjustments	-3,559	337,100	0	**333,541**
c) Adjustments to Meet Congressional Intent	0	0	-7,965	**-7,965**
d) General Provisions	10,000	0	0	**10,000**
FY 2020 Appropriated Amount	**31,328,106**	**2,306,095**	**446,359**	**34,080,560**
In-House Care	9,281,856			**9,281,856**
Private Sector Care	14,975,181			**14,975,181**
Consolidated Health Support	1,941,936			**1,941,936**
Information Management	1,956,738			**1,956,738**
Management Activities	330,246			**330,246**
Education and Training	750,860			**750,860**
Base Operations/Communications	2,091,289			**2,091,289**
RDT&E		2,306,095		**2,306,095**
Procurement			446,359	**446,359**
2. OCO and Other Supplemental Enacted	347,746	0	0	**347,746**
a) OCO and Other Supplemental Requested	347,746	0	0	**347,746**
b) Section 9014 Congressional Directed Reduction	0	0	0	**0**
3. Fact-of-Life Changes	0	0	0	**0**
a) Functional Transfers	0	0	0	**0**
1. Transfers In	0	0	0	**0**
2. Transfers Out	0	0	0	**0**
b) Technical Adjustments	0	0	0	**0**
1. Increases	2,716	0	0	**2,716**

Defense Health Program
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Summary of Funding Increases and Decreases

	O&M	RDT&E	Procurement	DHP Total
2. Decreases	-2,716	0	0	**-2,716**
c) Emergent Requirements	0	0	0	**0**
1. Program Increases	0	0	0	**0**
a) One-Time Costs	0	0	0	**0**
b) Program Growth	0	0	0	**0**
2. Program Reductions	0	0	0	**0**
a) One-Time Costs	0	0	0	**0**
b) Program Decreases	0	0	0	**0**
FY 2020 Baseline Funding	**31,675,852**	**2,306,095**	**446,359**	**34,428,306**
In-House Care	9,339,315			**9,339,315**
Private Sector Care	15,262,668			**15,262,668**
Consolidated Health Support	1,943,668			**1,943,668**
Information Management	1,959,454			**1,959,454**
Management Activities	330,246			**330,246**
Education and Training	749,309			**749,309**
Base Operations/Communications	2,091,192			**2,091,192**
RDT&E		2,306,095		**2,306,095**
Procurement			446,359	**446,359**
4. Reprogrammings	771,768	0	0	**771,768**
a) Increases	771,768	0	0	**771,768**
b) Decreases	0	0	0	**0**
Revised FY 2020 Estimate	**32,447,620**	**2,306,095**	**446,359**	**35,200,074**
In-House Care	9,339,315			**9,339,315**
Private Sector Care	15,836,436			**15,836,436**
Consolidated Health Support	1,943,668			**1,943,668**
Information Management	2,157,454			**2,157,454**
Management Activities	330,246			**330,246**
Education and Training	749,309			**749,309**
Base Operations/Communications	2,091,192			**2,091,192**
RDT&E		2,306,095		**2,306,095**
Procurement			446,359	**446,359**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)	-347,746	0	0	**-347,746**
a) OCO and Other Supplemental Requested	-347,746	0	0	**-347,746**

Defense Health Program
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Summary of Funding Increases and Decreases

	O&M	RDT&E	Procurement	DHP Total
b) Section 9014 Congressional Directed Reduction	0	0	0	**0**
FY 2020 Normalized Current Estimate	**32,099,874**	**2,306,095**	**446,359**	**34,852,328**
In-House Care	9,281,856			**9,281,856**
Private Sector Care	15,548,949			**15,548,949**
Consolidated Health Support	1,940,868			**1,940,868**
Information Management	2,157,454			**2,157,454**
Management Activities	330,246			**330,246**
Education and Training	749,309			**749,309**
Base Operations/Communications	2,091,192			**2,091,192**
RDT&E		2,306,095		**2,306,095**
Procurement			446,359	**446,359**
6. Price Change	923,830	14,645	12,673	**951,148**
7. Functional Transfers	-1,807,328	0	0	**-1,807,328**
a) Transfers In	16,936	0	0	**16,936**
b) Transfers Out	-1,824,264	0	0	**-1,824,264**
8. Program Increases	895,511	163,428	184,877	**1,243,816**
a) Annualization of New FY 2020 Program	0	0	0	**0**
b) One-Time FY 2021 Increases	31,300	0	0	**31,300**
c) Program Growth in FY 2021	864,211	163,428	184,877	**1,212,516**
9. Program Decreases	-762,334	-1,761,275	-25,983	**-2,549,592**
a) Annualization of FY 2020 Program Decreases	0	0	0	**0**
b) One-Time FY 2020 Increases	-10,000	0	0	**-10,000**
c) Program Decreases in FY 2021	-752,334	-1,761,275	-25,983	**-2,539,592**
FY 2021 Budget Request	**31,349,553**	**722,893**	**617,926**	**32,690,372**
In-House Care	9,560,564			**9,560,564**
Private Sector Care	15,841,887			**15,841,887**
Consolidated Health Support	1,338,269			**1,338,269**
Information Management	2,039,910			**2,039,910**
Management Activities	330,627			**330,627**
Education and Training	315,691			**315,691**
Base Operations/Communications	1,922,605			**1,922,605**
RDT&E		722,893		**722,893**
Procurement			617,926	**617,926**

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
In-House Care

I. Description of Operations Financed:

This Budget Activity Group provides for the delivery of medical and dental care plus pharmaceuticals received by Department of Defense eligible beneficiaries in Military Treatment Facilities and Dental Treatment Facilities in the Continental United States (CONUS) and Outside the Continental United States (OCONUS). This program includes the following:

Care in Department of Defense Medical Centers, Hospitals and Clinics - Includes resources for the provision of healthcare in DoD-owned and operated CONUS and OCONUS Military Treatment Facilities which are staffed, and equipped to provide inpatient care for both surgical and medical patients and/or outpatient care for ambulatory patients.

Dental Care - Includes resources for the provision of dental care and services in CONUS and OCONUS to authorized personnel through the operation of hospital departments of dentistry and installation dental clinics, and the operation of Regional Dental Activities.

Pharmaceuticals - Includes pharmaceuticals specifically identified and provided by Pharmacy Services in DoD owned and operated CONUS and OCONUS facilities. Excludes the cost of operating Pharmacy Services in the Military Treatment Facilities.

II. Force Structure Summary:

The In-House Care Budget Activity Group includes staffing in Military Treatment Facilities to provide the full range of inpatient and ambulatory medical and dental care services. In addition to medical and dental care, this Budget Activity Group also includes medical center laboratories, substance abuse programs, facility on-the-job training/education programs and federal health care sharing agreements. This Budget

II. Force Structure Summary (cont.)

Activity Group excludes operation of management headquarters, TRICARE Regional Offices, deployable medical and dental units and health care resources devoted exclusively to teaching organizations.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
In-House Care

III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
1. MEDCENs, Hospitals & Clinics (CONUS)	6,661,247	6,998,228	-250,759	-3.6	6,747,469	6,747,469	6,935,666
2. MEDCENs, Hospitals & Clinics (OCONUS)	458,294	392,609	10,898	2.8	403,507	403,507	464,918
3. Pharmaceuticals (CONUS)	1,555,632	1,563,687	0	0.0	1,563,687	1,563,687	1,548,414
4. Pharmaceuticals (OCONUS)	119,485	151,030	0	0.0	151,030	151,030	153,016
5. Dental Care (CONUS)	439,496	424,803	-49,100	-11.6	375,703	375,703	423,471
6. Dental Care (OCONUS)	40,358	40,258	202	0.5	40,460	40,460	35,079
Total	**9,274,512**	**9,570,615**	**-288,759**	**-3.0**	**9,281,856**	**9,281,856**	**9,560,564**

1. FY 2019 actuals includes $69,929K for OCO.
2. FY 2019 actuals does not include Department of Defense (DoD) Medicare-Eligible Retiree Health Care Fund (MERHCF) of $1,743,565K (O&M only).
3. FY 2020 estimate excludes $57,459K for OCO.
4. FY 2020 estimate includes -$3,559 foreign currency adjustment.
5. FY 2020 estimate does not reflect anticipated DoD MERHCF receipts of $1,846,400K (O&M only).
6. FY 2021 estimate excludes $65,072K for OCO.
7. FY 2021 estimate does not reflect anticipated DoD MERHCF receipts of $1,912,700K (O&M only).

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**9,570,615**	**9,281,856**
Congressional Adjustments (Distributed)	-285,200	
Congressional Adjustments (Undistributed)	-3,559	
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	**9,281,856**	
Fact-of-Life Changes (2020 to 2020 Only)		
Subtotal Baseline Funding	**9,281,856**	
Supplemental	57,459	
Reprogrammings		
Price Changes		240,504
Functional Transfers		-457,578
Program Changes		495,782
Current Estimate	**9,339,315**	**9,560,564**
Less: Wartime Supplemental	-57,459	
Normalized Current Estimate	**9,281,856**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 President's Budget Request (Amended, if applicable)		**9,570,615**
1. Congressional Adjustments		-288,759
a. Distributed Adjustments		
1) Equipment Purchases Excess Growth:	-35,000	
2) Medical Reform Implementation - Excess Funding to Replace Military Medical End Strength:	-250,000	
3) Printing and Reproduction Excess Growth:	-5,200	
4) SOCOM to DHA Transfer - Preservation of the Force and Family (POTFF) Program:	5,000	
b. Undistributed Adjustments		
1) Foreign Currency Adjustment:	-3,559	
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		**9,281,856**
2. OCO and Other Supplemental Enacted		57,459
a. OCO and Other Supplemental Requested		
1) Overseas Contingency Operations	57,459	
3. Fact-of-Life Changes		
FY 2020 Baseline Funding		**9,339,315**
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2020 Estimate		**9,339,315**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		-57,459
FY 2020 Normalized Current Estimate		**9,281,856**
6. Price Change		240,504
7. Functional Transfers		-457,578

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
a. Transfers In		
1) USSOCOM Embedded Behavioral Health Transfer to DHA: Resources transferred from US Special Operations Command (USSOCOM) to Defense Health Agency in order to fulfill unmet requirements at Special Operations Forces (SOF) and support the Commander of USSOCOM's directive that all SOF personnel will engage in behavioral health related prevention and performance enhancement activities. USSOCOM and Defense Health Agency (DHA) will continue to recognize the contribution behavioral healthcare to assuring individual, family, and unit readiness within Special Operations community. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.	7,089	
b. Transfers Out		
1) Defense-Wide Review (DWR) - Medical Readiness Transfer to the Military Departments: In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, the Defense Health Program has transferred the Service Medical Readiness activities which occur outside of the Military Treatment Facility to the Military Departments. This transfer allows the medical force structure to meet the operational requirements in support of the National Defense Strategy and support the Congressionally-mandated	-464,667	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
reforms to the Military Health System. The following Medical Readiness programs have been identified as functions that would be more effectively and efficiently run by the Military Departments and support development of a Ready Medical Force and will not have an adverse impact to the delivery of healthcare in the Military Treatment Facilities.		
(a) Army Medicine: (-$275,811K and -390 Civilian Full-Time Equivalents)		
(1) Soldier Readiness Processing (SRP) sites are designed to ensure Soldiers are medically ready to deploy to hazardous locations around the world. They are located at all installations with a concentration of COMPO 1 (Active Army) Soldiers. The SRP provides periodic review of medical readiness, as well as, last minute assessments before a rapid deployment. In addition, Soldiers are provided immunizations and blood tests, including HIV and pregnancy for females prior to entry into theater. Any temporary profiles are reviewed and resolved before the Soldier deploys. Preventive medicine and environmental health briefings are provided based on the deployment site. Upon redeployment, Soldiers return to the SRP site to complete another medical review and a Post Deployment Health Assessment. A Post Deployment Health Reassessment (PDHRA) is performed 90-180 days		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**

later in order to identify any medical issues resulting from the deployment. Resources for this mission include civilian staff, contractors to meet surge requirements, supplies, and pharmaceuticals.
(2) Medical Processing at Initial Entry Training (IET) installations provides medical exams for all accessing Soldiers when they start Basic Combat Training (BCT). The initial entry medical exams consist of a general medical exam, lab tests, and vaccinations. In addition, there are vision, hearing and dental screenings.
(3) Pre-Hospital Emergency Medical Services (PHEMS) provides primary Emergency Medical Services (EMS) to Army garrisons, and secondary EMS support to Training and Doctrine Command (TRADOC) training ranges. This mission supports the 2009 SECDEF guidance to provide adequate emergency transport in order to ensure definitive care within one-hour on a medical emergency. Army MEDCOM provides EMS/Ambulance service to 30 Army locations, while Army line provides EMS service at the remaining installations. This transfer will consolidate these missions with the Army.

(b) Air Force Medical Service: ($-20,020K)
(1) Resources will be used in support of Global Force Engagement (GFE). Global health engagement activities enable the United States Air Force to better interoperate with medical personnel and

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
infrastructure of partner nations. The International Health Specialist teams design global health engagements to increase capacity and capability of partner nations and the U.S. forces to deploy fully capable with the fewest resources necessary. (2) International Health Specialists personnel apply regional expertise, cross-cultural competency, and foreign language proficiency to develop, plan, program, and execute public health and medical security cooperation activities with partner nations. In addition, these specialists deliver expeditionary medical support to achieve strategic and operational objectives. These cooperation activities not only cover AFMS core competencies but also span the full spectrum of DoD's global health engagement such as medical and related scientific research, GHE methodology and best practice development, military professional development, and exercises and exchanges. GHE efforts serve as a gateway to cooperation. Medical cooperation, through structure health engagements, build trust and gain and maintain access to strategic areas of interest. (3) Funds are required for program management support for expeditionary medical skills and readiness training courses. These programs assist the Air Force Surgeon General in providing enterprise-level policy development and management		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals

and oversight of the following: medical readiness programs; strategic partnerships; medical capability development; operational medical logistics; dental operations; aerospace and operational medicine liaison to integrated operational medical support capabilities; oversight of the clinical aspects of medical operations in the deployed environment; and support to programs unique to the Air Force mission.
(3) The Center for the Sustainment of Trauma and Readiness Skills (C-STAR) provides real-time shock trauma training for the Air Force physicians, nurses, technicians, and Special Operations medics in preparation for their deployment to the Middle East. The C-STAR program embeds Air Force providers within the nation's major civilian trauma centers in order to train them on vital expeditionary medical skills. The relationships established and the cooperative learning environment have extended far beyond the classroom to include telemedicine consultations with military personnel in field hospitals in Iraq and Afghanistan and treatment of wounded soldiers upon their return to the United States.

(c) Navy Bureau of Medicine and Surgery: (-$168,836K and -305 Civilian Full-Time Equivalents)
(1) Operational medicine resources will be used for the development of policy for Navy Medicine Clinical Operation Programs. This program provides technical

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
oversight and policy guidance to the following functions: Operational Healthcare and Administration; Secondary/Specialty Care and Dental Classifications; Women's Health; and Embedded Mental Health programs to maintain wartime readiness and professional development of mental health specialties.		
(2) Force Medical Readiness resources will be used to support programs that evaluate and advise on Navy and Marine Corps matters regarding current standards, practices, procedures and safety issues associated readiness programs such as Family Readiness; Medical Evaluation Boards (MEB) and Integrated Disability Evaluation System (IDES); Active Duty and Reserve Medical Readiness; and Qualifications and Standards.		
(3) Fleet Programs resources will be used to support efforts that provide operational medical support to the fleet surgeons and to the force medical officers of the Navy and Marine Corps. This program directly supports Navy Aerospace Medicine, Undersea Medicine, Personnel Reliability Programs, Independent Duty Corpsman, Radiation Health, and Surface Medicine.		
(4) Operational Health Informatics resources will be used in support of the promotion of design, testing, configuration, implementation, and sustainment of inpatient, outpatient, and dental		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
technology solutions within the Naval operational environment.		
(5) Enterprise Operations resources will be used in support of enterprise-wide programs with operations throughout Navy Medicine to include the following: Limited Duty (LIMDU) SMART System, Consolidated Information Center (CIC), and Navy Sexual Assault Prevention and Response Organization (Navy SAPRO).		
8. Program Increases		567,202
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
c. Program Growth in FY 2021		
1) a. Air Force Critical Care Level III Trauma Center at Nellis Air Force Base:	32,756	
This program allows the 99 MDG to serve as a tertiary care site in suppport of the 2017 NDAA and subsequent Congressional and DoD Directives to capitalize on DoD-Civilian partnerships to maximize direct care readiness currency platforms. The DoD seeks to expand the critical care and trauma platforms necessary to maintain medical and surgical readiness and currency requirements for clinicians, nurses, and technicians as part of the medical/surgical teams they also deploy with. Based on recent Clinical Performance for Readiness measures implemented by the Air Force, only 5% of emergency medicine physicians, 47% of medicine physicians, and 37% of surgeons in the Air Force are performing enough currency related procedures to		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
maintain their deployed skillset. Resources requested will fund project to create a robust currency platform at the 99th Medical Group, Nellis ai Force Base, Nevada which will allow all Active Duty Medics and the teams they deploy with to treat critical care and trauma patients to maintain skills and experience needed for deployment readiness. Thislocation expands existing partnerships with a local Level I Trauma Center and VA hospital in a medically underserved area within the greater Las Vegas Market. Resources will fund equipment, supplies, materials, and civilian Full-Time Equivalents (clinicians, nurses, ancillary, and support staff). The project optimizes medical integration, provides a cost effective solution for bed and specialty care expansion, and optimizes beneficiary primary care access and utilization. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.		
2) b. Capability Replacement:	334,613	
Resources required to fund civilian and contractor full-time equivalents to ensure uninterrupted access to timely, high-quality healthcare as the Department redirects uniformed manpower toward more direct warfighting functions. Defense Health Agency (DHA) and the Military Medical Services established common mitigation planning factors, reviewed multi-service		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
market cuts, identified mitigation challenges, and aggregated Medical Treatment Facility level mitigation plans to inform the FY 2021 Budget Request. Funds will ensure that the right specialties and support staff are in the right locations to maximize their knowledge, skills, and abilities through the most efficient and effective use of the direct care system, purchased care, and strategic partnerships to provide a ready medical force and medically ready force, while also providing world-class healthcare and training. Funding required to hire Graduate Health Professional Education (GHPE) staff and those supporting GHPE platforms, Military Treatment Facility (MTF)-required administrative staff, MTF-required ancillary staff (i.e. lab, radiology, pharmacy), staff performing base support functions, active duty Behavioral Health, Emergency Medicine, Flight Medicine, and Underseas Medicine. Funding will mitigate potential access to care issues caused by the reduction in military providers. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.		
3) c. Army MEDCOM Civilian Full-Time Equivalent Requirement:	63,428	
Funds 637 Army civilian full-time equivalents used to support healthcare delivery requirements in the		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
areas of Pain Management, Traumatic Brain Injury, and Soldier Center Medical Home (SCMH). Funding is needed to properly align program to requirements as an effort to meet civilian staffing requirements. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.		
4) d. Army Holistic Health and Fitness (H2F): Funds 132 civilian full-time equivalents and 330 contractor full-time equivalents associated with the Holistic Health and Fitness (H2F) Program. These civilian and contractor personnel will serve as embedded occupational therapists, cognitive enhancement specialist, physical therapists, registered dietitians, athletic trainers, and strength coaches responsible for providing on-site medical coverage, musculoskeletal recovery and physical performance improvement capabilities to reduce medical non-deployability and improve unit readiness factors. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.	59,539	
5) e. Embedded Behavioral & Mental Health: Resources required to fund embedded mental health and physical therapist providers in support of the National Defense Strategy priorities to restore	30,711	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
readiness and create a more resilient force. These embedded units provide care and support, decrease the distance between the need and the provider while reducing stigma related to Post-Traumatic Stress Disorder and major depressive disorders. Providers are responsible for performing initial evaluations, consultations, diagnosis and treatment planning of a wide variety of musculoskeletal conditions, injury prevention and rehabilitation, concussion research, surgical and non-surgical treatment of injuries in order to optimize mission performance while lowering military occupational related risk, mitigating down-time and ensuring a medically-ready force. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.		
6) f. Dental Care Requirements: Resources required due an increased number of oral surgical procedures in order to treat moderate to advanced periodontal disease and/or peri-implantitis, in addition to, a projected increase in Dental Weighted Values and beneficiaries in FY 2021. A contract study with the goal of improving and standardizing contract programming rates had determined that contract pricing adjustments were necessary in order to align the actual cost of dental care contracted services provided in the execution year. FY 2019 Dental Care actuals indicate	27,918	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
that reductions to dental contract requirements or supplies could degrade readiness. Funding increases OP-32 Line 986-Medical Care Contracts, OP-32 Line 920.1 Supplies and Materials, OP-32 925 Equipment Purchases, and OP-32 Line 955 Other Costs (Medical Care. The FY 2020 Dental Care (CONUS and OCONUS) baseline funding is $416,163K.		
7) g. Virtual Health Expansion: Resources required to fund the incremental increase for the expansion of the Military Health System (MHS) Virtual Health Program, which synchronizes, standardizes, and coordinates virtual medical services across the Department of Defense that support remote, clinical, operational and garrison forces. Specifically, resources will fund 28 additional contractor Full-Time Equivalents to include nurses, nurse practitioners, video healthcare coordinators, health educators, specialty providers, program managers, engineers, and administrative support staff. Additionally, funds will support virtual health synchronous solutions that help enable initial operating capability (IOC) Markets and allow health care providers to deliver real-time health assessments, diagnoses, interventions, and supervision through video conference, telephone, or tablet application vastly improving access to care. Resources will also support virtual video visit roll-outs, as well as, virtual health cart purchases and sustainment that	10,127	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
provide remote specialty care in IOC markets by integrating cameras and displays to bring remote physicians right to the side of the patient. Lastly, funds will support remote health monitoring platform capabilities, as well as, asynchronous virtual health solutions used in the development of the Global Teleconsultation Portal (GTP) to support teleconsultations across the MHS Enterprise. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.		
8) h. Expansion of Eligibility for Hearing Aids: Resources required to fund the incremental increase associated with the expansion of eligibility for hearing aid benefits to pediatric dependents. Provides funds to contract program office for health care costs (i.e., costs to provide hearing aids) and administrative costs. Section 1077 of Title 10 would extend eligibility for hearing aids to all pediatric dependents. Failure to correct hearing loss at a young age can impact the child's development into adulthood and can result in additional costs to the TRICARE Program, including, but not limited to, behavioral, occupational, and speech-language therapies. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The	4,110	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.		
9) i. Armed Forces Retirement Home: Funds required for military healthcare beneficiaries of the Armed Forces Retirement Home. Funds provide high quality, cost-effective health care to beneficiaries including on-site non-acute medical and dental care, pharmaceuticals and a continuum of long-term care services. The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,098 CMEs.	4,000	
9. Program Decreases		-71,420
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
c. Program Decreases in FY 2021		
1) a. Reduced Pharmaceutical Requirements: Detailed trend analysis was performed to project cost per prescription, fill of specialty drugs targeted for specific conditions, and cost of brand named medications. Incorporating this analysis into budget projections coupled with better pricing methodologies resulted in improved requirements identification and resource management. The FY 2020 baseline funding for Pharmaceutical, In-House Care(CONUS and OCONUS) is $1,714,717K.	-17,383	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
2) b. One Less Compensable Day: In accordance with OMB Circular A-11, Section 85.5C, reduces civilian pay to account for one fewer paid day in FY 2021 (261 paid days) than in FY 2020 (262 paid days). The FY 2020 In-House Care baseline funding is $9,285,415K. The FY 2020 In-House baseline civilian staffing is 45,873. The FY 2020 In-House Care baseline contractor staffing is 14,092 CMEs.	-17,777	
3) c. Defense-Wide Review (DWR) - Downsizing of 50 Medical Treatment Facilities: Reduces funding associated with USD(P&R)'s implementation of 10 United States Code Section 1073d that defines criteria for types of military medical centers, hospitals and ambulatory clinics and section 703(d) of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2017 that requires an implementation plan for adjusting medical treatment facilities (MTFs) to meet the Section 1073d criteria. Section 703(d) of the NDAA for FY 2017 requires an implementation plan adjusting MTF capabilities and capacities to meet statutory requirements. Based on this implementation of the Section 703(c) criteria used in development of this report to Congress, the Department will develop more detailed MTF specific implementation plans that will provide schedules and milestones. The FY 2020 In-House Care baseline funding is $9,285,415K. FY 2020 In-House baseline	-36,260	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
civilian staffing is 45,873. FY 2020 In-House Care baseline contractor staffing is 14,092 CMEs.		
FY 2021 Budget Request		**9,560,564**

IV. Performance Criteria and Evaluation Summary:

	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Population - Eligible Beneficiaries, CONUS					
Active Duty **	1,425,455	1,429,209	1,443,922	3,754	14,713
Active Duty Family Members	1,825,633	1,832,741	1,856,027	7,108	23,286
Retirees	1,018,304	1,011,244	1,005,378	-7,060	-5,866
Family Members of Retirees	2,491,431	2,482,536	2,474,911	-8,895	-7,626
Subtotal Eligible	**6,760,823**	**6,755,730**	**6,780,238**	**-5,093**	**24,508**
Medicare Eligible Beneficiaries ***	2,397,612	2,419,560	2,440,669	21,948	21,109
Total Average Eligible Beneficiaries	**9,158,435**	**9,175,290**	**9,220,907**	**16,855**	**45,617**
Population - Eligible Beneficiaries, OCONUS					
Active Duty **	165,222	172,471	163,197	7,249	-9,274
Active Duty Family Members	125,024	134,698	120,952	9,674	-13,746
Retirees	22,093	21,970	21,873	-123	-97
Family Members of Retirees	47,020	46,859	46,727	-161	-133
Subtotal Eligible	**359,359**	**375,998**	**352,748**	**16,639**	**-23,250**
Medicare Eligible Beneficiaries	40,618	40,955	41,284	337	329
Total Average Eligible Beneficiaries	**399,977**	**416,954**	**394,032**	**16,977**	**-22,921**
Population - Eligible Beneficiaries, Worldwide					
Active Duty **	1,590,677	1,601,680	1,607,119	11,003	5,439
Active Duty Family Members	1,950,657	1,967,439	1,976,979	16,782	9,540
Retirees	1,040,397	1,033,214	1,027,251	-7,183	-5,963
Family Members of Retirees	2,538,451	2,529,396	2,521,637	-9,055	-7,758
Subtotal Eligible	**7,120,182**	**7,131,728**	**7,132,986**	**11,546**	**1,258**
Medicare Eligible Beneficiaries:					
Active Duty Family Members	4,896	4,925	4,935	29	10
Guard/Reserve Family Members	1,464	1,486	1,510	22	24
Eligible Retirees	1,175,156	1,187,989	1,199,918	12,833	11,929
Eligible Family Members of Retirees ****	763,684	771,982	779,704	8,298	7,722
Survivor	491,088	492,192	493,944	1,104	1,753
Other	1,942	1,942	1,942	0	0
Total Medicare Eligible Beneficiaries	**2,438,230**	**2,460,515**	**2,481,953**	**22,285**	**21,438**
Total Average Eligible Beneficiaries	**9,558,412**	**9,592,243**	**9,614,939**	**33,831**	**22,696**

Notes:

1. (*) FY 2019-2021 Estimates are projected numbers of MHS eligible beneficiaries and are based on (a) future Budget End Strengths of Active Duty and Active Guard/Reserve members and (b) the DoD's Actuary's projection of retirees.

2. (**) Active Duty and Active Duty Guard/Reserve beneficiaries were excluded from being counted as Medicare Eligible.

3. (***) The US "Medicare Eligible Beneficiaries" are defined as MERHCF beneficiaries: Active Duty Family Members, Guard/Reserve Family Members, Eligible Retirees, Eligible Family Members of Retirees, Inactive Guard/Reserve, Inactive Guard/Reserve Family Members, Survivors, and Others.

4. (****) The Worldwide "Eligible Family Members of Retirees" are defined as MERHCF beneficiaries: Family Members of Retirees, Inactive Guard/Reserves, and Inactive Guard/Reserve Family Members.

5. Numbers may not sum to totals due to rounding.

6. USFHP enrollees who are also Medicare Eligible are shown in Eligible Beneficiaries, not under Medicare Eligible Beneficiaries.

IV. Performance Criteria and Evaluation Summary:

	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Enrollees - Direct Care					
TRICARE Region - East	1,845,831	1,854,506	1,856,207	8,675	1,701
TRICARE Region - West	976,167	977,838	977,172	1,670	-666
TRICARE Region - Europe	72,572	72,572	72,572	0	0
TRICARE Region - Pacific	151,520	151,257	151,435	-263	178
TRICARE Region - Latin America	2,602	2,602	2,602	0	0
Alaska	53,670	54,010	53,892	340	-119
Sub-Total CONUS Regions	2,875,668	2,886,354	2,887,271	10,686	917
Sub-Total OCONUS Regions	226,694	226,432	226,609	-263	178
Total Direct Care Enrollees	3,102,363	3,112,786	3,113,880	10,423	1,095

Source: Service Medical Departments Business Plans
Enrollees are only TRICARE PRIME Enrollees enrolled to a military treatment facility.

Excludes "Plus" empaneled and other TRICARE space available users.

Effective January 1, 2018, TRICARE North and South Regions combined to form TRICARE East in accordance with the 2017 National Defense Authorization Act.

	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Direct Care System Workload (from M2 and Business Planning Tool)					
Inpatient Admissions, Non-Weighted (SIDR Dispositions-All)	198,864	200,837	200,634	1,973	-204
Inpatient Admissions, Weighted (MS-DRG RWPs, Non Mental Health)	166,998	168,496	168,625	1,497	129
Inpatient Admissions, Occupied Bed Days (Mental Health Only)	89,787	91,080	91,453	1,293	373
Average Length of Stay (ALL Bed Days/All Dispositions)	2.60	2.60	2.60	0	0.00
Ambulatory Visits, Non-Weighted (Encounters, CAPER)	38,273,648	38,282,904	38,296,219	9,256	13,315
Ambulatory Visits, Weighted (Adj Provider Aggregate RVUs, CAPER)	74,438,658	74,417,542	74,348,424	-21,115	-69,118
Ambulatory Procedures, Weighted (Aggregate Weight APCs, CAPER)	10,194,682	10,225,782	10,205,917	31,100	-19,865
Number of Outpatient Pharmacy Prescriptions "Scripts"	42320073.00	42459546.05	42462359.80	139,473	2,814

Notes:
1. Data source is M2 and performance plans.
2. Workload excludes Tricare for Life (TFL) patients.

	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Dental Workload (Dental Weighted Values (DWVs)(from Components)					
CONUS	11,128,387	10,930,082	10,983,058	-198,305	52,975
OCONUS	2,102,719	2,101,462	2,112,740	-1,257	11,278
Total DWVs	13,231,106	13,031,544	13,095,797	-199,562	64,253
CONUS					
Active Duty	10,420,071	10,235,845	10,288,955	-184,226	53,111
Non-Active Duty	708,316	694,238	694,102	-14,078	-136
Total CONUS	11,128,387	10,930,082	10,983,058	-198,305	52,975
OCONUS					
Active Duty	1,607,293	1,609,863	1,618,826	2,570	8,963
Non-Active Duty	495,426	491,599	493,914	-3,827	2,315
Total OCONUS	2,102,719	2,101,462	2,112,740	-1,257	11,278

Note: The FY 2019 to FY 2020 decrease is due to an anticipated decrease in available providers. The FY 2020 to FY 2021 increase is due to service component performance plan projections.

V. Personnel Summary	FY 2019	FY 2020	FY 2021	Change FY 2019/ FY 2020	Change FY 2020/ FY 2021
Active Military End Strength (E/S) (Total)	53,157	52,471	45,693	-686	-6,778
Officer	17,541	18,128	16,959	587	-1,169
Enlisted	35,616	34,343	28,734	-1,273	-5,609
Active Military Average Strength (A/S) (Total)	54,134	52,815	49,083	-1,319	-3,732
Officer	18,048	17,835	17,544	-213	-291
Enlisted	36,086	34,980	31,539	-1,106	-3,441
Civilian FTEs (Total)	46,662	45,873	45,847	-789	-26
U.S. Direct Hire	45,039	44,286	44,260	-753	-26
Foreign National Direct Hire	791	653	653	-138	0
Total Direct Hire	45,830	44,939	44,913	-891	-26
Foreign National Indirect Hire	674	776	776	102	0
Reimbursable Civilians	158	158	158	0	0
Average Annual Civilian Salary ($ in thousands)	99.7	101.9	104.4	2.2	2.5
Contractor FTEs (Total)	17,127	14,098	14,363	-3,029	265

Explanation of changes in Active Military End Strength:
The decrease from FY 2019 to FY 2020 (-686) includes transfers to the Defense Health Agency program element for Major Headquarters Activities; 10% end strength reduction for Major Headquarters Activities; mission transfers to the Military Departments for Medical Readiness; transfers to the Military Departments for reductions to medical end strength; and prior programming transfers to the Military Departments for Major Headquarters

Activities reductions. The decrease from FY 2020 to FY 2021 (-6,778) includes reductions in support of Section 702 of the FY 2017 National Defense Authorization Act, Reform of Administration of the Defense Health Agency and military medical treatment facilities to include 10% reduction for Major Headquarters Activities (-4: Army -2; Navy -2); transfers from In-House Care to the Management Activities' Defense Health Agency program element for Major Headquarters Activities (-31: Army -11; Navy -12; Air Force -8); mission transfers to the Military Departments for medical readiness programs (-2,222: Army -1,645; Navy -2,498; Air Force -497); internal realignment from In-House Care to Consolidated Health Support in support of the Navy Bureau of Medicine and Surgery's emerging requirements (-441), transfers to the military departments for Medical Headquarters activities (Army: -5); transfers to the military departments for medical readiness programs (Navy: -733); and internal reprogramming to meet emerging requirements (Navy: +2), and net reductions from the phased drawdown of transfers to the military departments for medical military E/S reductions (Air Force: -926).

Explanation of changes in Civilian FTEs:
The decrease from FY 2019 to FY 2020 (-789) includes mission transfers to the Military Departments for medical readiness: (-205: Army: -37, Navy: -168); transfers to the Defense Health Agency for Major Headquarters Activities (-112: Army: -15, Navy -97); and Service headquarters execution and internal reprogramming adjustments (-472: Army: +2,454, Navy: +52, Air Force: -96, DHA: -2, NCR: -2,879, USUHS: -1). Manpower adjustments by component are: Army Medical Command (+2,402), Navy Bureau of Medicine and Surgery (-213), Air Force Medical Service (-96), Defense Health Agency (-2), National Capital Region (-2,879), Uniformed Services University of the Health Services (-1). The decrease from FY 2020 to FY 2021 (-26) includes Service headquarters execution and internal reprogramming adjustments (+669: Army: +638, Navy: +10, Air Force: +11, NCR: +9, USUHS: +1); and the transfer of In-House Care FTEs following the Defense Wide Review to the Department of the Army (-390), the Department of the Navy (-305). Manpower adjustments by component are: Army Medical Command (+248), Navy Bureau of Medicine and Surgery

(-295), and Air Force Medical Service (+11), National Capital Region (+9), and Uniformed Services University of the Health Services (+1).

Explanation of changes in Contractor FTEs:
The decrease from FY 2019 to FY 2020 (-3,029) is a result of reduced contract requirements in In-House Care associated with efficiencies gained through elimination of duplicative headquarters functions and from efforts to align funds in support of the Defense Health Agency's Strategy for MHS-wide priorities. The increase from FY 2020 to FY 2021 (+265) is attributed to the MHS-wide efforts to mitigate access-to-care issues caused by the reduction in military providers.

VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	4,475,685	0	124,424	-95,137	4,504,972	0	69,377	37,571	4,611,920
103 Wage Board	99,973	0	2,779	-11,389	91,363	0	1,407	975	93,745
104 FN Direct Hire (FNDH)	25,143	0	699	-3,998	21,844	0	336	161	22,341
105 Separation Liability (FNDH)	1,467	0	41	-41	1,467	0	23	-23	1,467
107 Voluntary Sep Incentives	1,994	0	55	-55	1,994	0	31	-31	1,994
199 TOTAL CIV COMPENSATION	**4,604,262**	**0**	**127,998**	**-110,620**	**4,621,640**	**0**	**71,174**	**38,653**	**4,731,467**
308 Travel of Persons	76,756	0	1,535	-9,569	68,722	0	1,374	-484	69,612
399 TOTAL TRAVEL	**76,756**	**0**	**1,535**	**-9,569**	**68,722**	**0**	**1,374**	**-484**	**69,612**
401 DLA Energy (Fuel Products)	698	0	-5	-364	329	0	-17	-36	276
402 Service Fund Fuel	10	0	0	-1	9	0	0	1	10
412 Navy Managed Supply, Matl	678	0	14	-38	654	0	26	-14	666
416 GSA Supplies & Materials	7,725	0	155	427	8,307	0	166	584	9,057
417 Local Purch Supplies & Mat	57,320	0	1,146	-3,654	54,812	0	1,096	-23,738	32,170
422 DLA Mat Supply Chain (Medical)	36,806	0	-147	-17,288	19,371	0	27	55	19,453
499 TOTAL SUPPLIES & MATERIALS	**103,237**	**0**	**1,163**	**-20,918**	**83,482**	**0**	**1,298**	**-23,148**	**61,632**
502 Army Fund Equipment	340	0	0	276	616	0	25	-12	629
503 Navy Fund Equipment	121	0	2	96	219	0	9	-5	223
505 Air Force Fund Equip	31,158	0	0	-31,158	0	0	0	0	0

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OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
506 DLA Mat Supply Chain (Const & Equip)	1,211	0	-6	-982	223	0	0	4	227
507 GSA Managed Equipment	5,263	0	105	4,823	10,191	0	204	1	10,396
599 TOTAL EQUIPMENT PURCHASES	**38,093**	**0**	**101**	**-26,945**	**11,249**	**0**	**238**	**-12**	**11,475**
611 Navy Surface Warfare Ctr	6,073	0	99	-5,277	895	0	73	-56	912
614 Space & Naval Warfare Center	7	0	0	-7	0	0	0	0	0
631 Navy Base Support (NFESC)	7	0	1	-8	0	0	0	0	0
633 DLA Document Services	13,205	0	66	-11,333	1,938	0	13	25	1,976
634 NAVFEC (Utilities and Sanitation)	7	0	0	-7	0	0	0	0	0
635 Navy Base Support (NAVFEC Other Support Services)	7	0	0	-7	0	0	0	0	0
647 DISA Enterprise Computing Centers	3	0	0	-3	0	0	0	0	0
675 DLA Disposition Services	7	0	0	-7	0	0	0	0	0
677 DISA Telecomm Svcs - Reimbursable	3	0	0	69	72	0	0	1	73
679 Cost Reimbursable Purchase	7	0	0	-7	0	0	0	0	0
692 DFAS Financial Operations (Navy)	7	0	0	-7	0	0	0	0	0

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OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
699 TOTAL DWCF PURCHASES	**19,333**	**0**	**166**	**-16,594**	**2,905**	**0**	**86**	**-30**	**2,961**
707 AMC Training	5	0	1	-6	0	0	0	0	0
719 SDDC Cargo Ops-Port hndlg	49	0	19	-47	21	0	-6	6	21
771 Commercial Transport	7,645	0	153	1,162	8,960	0	179	-162	8,977
799 TOTAL TRANSPORTATION	**7,699**	**0**	**173**	**1,109**	**8,981**	**0**	**173**	**-156**	**8,998**
901 Foreign National Indirect Hire (FNIH)	31,242	0	0	4,697	35,939	0	719	98	36,756
912 Rental Payments to GSA (SLUC)	129	0	3	-103	29	0	1	-1	29
913 Purchased Utilities (Non-Fund)	196	0	4	-200	0	0	0	0	0
914 Purchased Communications (Non-Fund)	3,297	0	66	-2,555	808	0	16	1	825
915 Rents (Non-GSA)	14,300	0	286	-3,005	11,581	0	232	1,695	13,508
917 Postal Services (U.S.P.S)	1,228	0	25	-124	1,129	0	23	-14	1,138
920 Supplies & Materials (Non-Fund)	547,131	0	21,338	-128,396	440,073	0	17,163	-5,556	451,680
921 Printing & Reproduction	3,118	0	62	1,252	4,432	0	89	5,037	9,558
922 Equipment Maintenance By Contract	200,232	0	4,005	-53,402	150,835	0	3,017	-3,172	150,680
923 Facilities Sust, Rest, & Mod by Contract	118,442	0	2,369	22,447	143,258	0	2,865	-3,848	142,275

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OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
924 Pharmaceutical Drugs	1,674,692	0	65,313	-25,288	1,714,717	0	66,874	-80,161	1,701,430
925 Equipment Purchases (Non-Fund)	258,656	0	10,088	143,847	412,591	0	16,091	-84,508	344,174
926 Other Overseas Purchases	4,118	0	82	-4,200	0	0	0	0	0
930 Other Depot Maintenance (Non-Fund)	1,493	0	30	-1,523	0	0	0	0	0
932 Mgt Prof Support Svcs	42,663	0	853	-27,786	15,730	0	315	-1,963	14,082
933 Studies, Analysis & Eval	47,818	0	956	-31,028	17,746	0	355	-10,902	7,199
934 Engineering & Tech Svcs	1,397	0	28	-1,425	0	0	0	0	0
936 Training and Leadership Development (Other Contracts)	4	0	0	-4	0	0	0	0	0
937 Locally Purchased Fuel (Non-Fund)	403	0	-3	22	422	0	8	2	432
955 Other Costs (Medical Care)	373,676	0	14,573	-20,054	368,195	0	14,360	-76,627	305,928
957 Other Costs (Land and Structures)	8,357	0	167	-8,524	0	0	0	0	0
959 Other Costs (Insurance Claims/Indmnties)	892	0	18	-910	0	0	0	0	0
960 Other Costs (Interest and Dividends)	477	0	10	-487	0	0	0	0	0
964 Other Costs (Subsistence and	11,158	0	223	-8,944	2,437	0	49	0	2,486

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OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
Support of Persons)									
984 Equipment Contracts	400	0	8	-408	0	0	0	0	0
985 Research & Development, Contracts	11,818	0	0	-11,818	0	0	0	0	0
986 Medical Care Contracts	865,487	3,335	33,884	185,990	1,088,696	0	42,459	261,299	1,392,454
987 Other Intra-Govt Purch	70,079	0	1,402	-67,745	3,736	0	75	8,215	12,026
988 Grants	6,857	0	137	-2,632	4,362	0	87	-3,576	873
989 Other Services	67,754	5,878	1,473	-35,382	39,723	0	794	34,173	74,690
990 IT Contract Support Services	57,618	0	1,152	-30,332	28,438	0	569	-16,811	12,196
999 TOTAL OTHER PURCHASES	**4,425,132**	**9,213**	**158,552**	**-108,020**	**4,484,877**	**0**	**166,161**	**23,381**	**4,674,419**
Total	**9,274,512**	**9,213**	**289,688**	**-291,557**	**9,281,856**	**0**	**240,504**	**38,204**	**9,560,564**

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I. Description of Operations Financed:

This Budget Activity Group provides for all medical and dental care plus pharmaceuticals received by Military Health System (MHS)-eligible beneficiaries using healthcare services provided in the private sector. This includes the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) Program, the TRICARE Managed Care Support Contracts (MCSC), the Uniformed Services Family Health Program (USFHP), the TRICARE Overseas Program (TOP), the Supplemental Care Program, TRICARE Mail Order Pharmacy (TMOP), the National Retail Pharmacy, TRICARE Reserve Select (TRS), which is a premium based program for reservists and their family members, and various support activities.

Pharmaceuticals - Purchased Health Care: Includes expenses for the pharmaceutical costs associated with contractual pharmacy services providing authorized benefits to eligible beneficiaries via the TRICARE Mail Order Pharmacy (TMOP). Excludes manpower authorizations and all administrative costs of the Defense Health Agency to include regional offices and Defense Supply Center-Philadelphia's management of the TMOP.

National Retail Pharmacy - Includes expenses for the pharmaceutical costs associated with contractual pharmacy services providing authorized benefits to eligible beneficiaries via the TRICARE Retail Pharmacy Program. The TRICARE Retail Pharmacy Program provides network pharmaceutical prescription benefits for eligible beneficiaries from private sector retail pharmacies.

TRICARE Managed Care Support Contracts (MCSC) – Includes expenses for the at-risk health care costs specifically for providing benefits identified in Title 32 United States Code of Federal Regulations 199 and measurable to the following for areas serviced by TRICARE Managed Care Support Contracts: healthcare authorized under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) for the following beneficiaries: (a) retired military personnel and (b) for spouses and dependent children of active duty,

I. Description of Operations Financed (cont.)

retired, or deceased military personnel in civilian facilities and by private practitioners. Also includes costs for the Extended Care Health Option (ECHO) for disabled dependents of active duty personnel covered under the Program for Persons with Disabilities (PFPWD) Act: Includes healthcare costs for those programs that are considered at-risk to the TRICARE Managed Care Support Contracts, and external and internal resource sharing agreements when paid by the TRICARE Managed Care Support contractors. In addition, it includes underwritten costs for health care for those beneficiaries who have enrolled directly with the MCSC affiliated contracted providers.

Excluded from MCSC are PSC healthcare costs captured in separate PSC programs due to population or separate PSC contracts for these areas. Such as: (a) Beneficiaries enrolled to Military Treatment Facility (MTF) providers for health care are accounted for in PE 0807738; (b) claims processed by the TRICARE Overseas Contract (PE 0807749); (c) any not-at-risk/non-underwritten costs associated with the Supplemental Care Program (PE 0807743) and (d) Miscellaneous Purchased Care activities (PE 0807751) such as surveys, demonstrations or pilots requested by Congress. Also excluded are Defense Health Agency (DHA) costs for manpower authorizations and any administrative costs of DHA executive agents associated with the management of TRICARE Managed Care Support Contracts.

Military Treatment Facility (MTF) Enrollees Purchased Care - Includes expenses for the underwritten costs for TRICARE health care benefits provided to the MTF Prime enrollees as authorized under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). Excludes health care provided under the Supplemental Care Program for Active Duty service members and expensed in PE 0807743.

Dental Purchased Care - Includes expenses associated with the government paid portion of insurance premiums specifically for providing dental benefits in civilian facilities and

I. Description of Operations Financed (cont.)

by private practitioners for the beneficiaries who are enrolled in the TRICARE Dental Program. Beneficiaries eligible for enrollment are: (a) active duty family members and (b) select reservist or individual ready reservist (IRR) and dependent family members. Also, includes administrative, management, and health care costs associated with these dental services. Excludes dental services and costs expensed for Active Duty members in the Supplemental Care - Dental Care (PE 087745) and direct health care system (Dental Care – CONUS, PE 807715 and Dental Care – OCONUS, PE 807915).

Uniformed Services Family Health Program (USFHP) - Includes costs based on annual capitation rates for providing TRICARE-like benefits authorized through contracts with designated civilian hospitals in selected markets to beneficiaries that enroll to a USFHP civilian facility located in their geographic residence. Beneficiaries eligible for enrollment into USFHP include active duty family members, retirees and their family members and survivors who live within the specially designated geographic area.

Supplemental Care - Health Care - Includes costs for providing the TRICARE Prime benefit to active duty service members and other designated eligible patients who receive health care services in the civilian sector or non-defense facilities either referred or non-referred from the Military Treatment Facility, emergent care and authorized non-emergent care. Includes members in travel status, Navy/Marine Corps service members enrolled to deployable units and referred by the unit primary care manager, eligible Reserve Component personnel, ROTC students, cadets/midshipmen, and eligible foreign military. This program also covers health care sought in the civilian sector due to active duty assignments in remote CONUS locations. The types of claims include health care under TRICARE Prime Remote, MTF referred care, emergency care, and authorized non-emergency/non-referred care. Includes the costs of sharing agreements that are not paid

I. Description of Operations Financed (cont.)

by the managed care support contractors. Excludes all costs associated with dental care for Active Duty members expensed in Supplemental Care – Dental (PE 807745).

Supplemental Care - Dental – Includes costs for a dental benefit for uniform dental care and administrative costs for active duty members including eligible mobilized select reserves or individual ready reserves (IRR), receiving services in the civilian sector to include dental practitioners within Department of Veterans Affairs' facilities. This program also covers dental care for active duty members in the civilian sector due to military assignments in remote CONUS locations.

Continuing Health Education/Capitalization of Assets (CHE/CAP) - Provides for support of graduate medical education and capital investment within civilian facilities which provide services to the Military Health System and Medicare. These facilities operate under the Diagnosis Related Group (DRG system) of payment providing federal inpatient services under TRICARE and Medicare.

TRICARE Overseas Program (TOP)- Includes costs specifically for delivery of Military Health System Prime benefits in civilian facilities by private practitioners to active duty and eligible active duty family member beneficiaries enrolled to the TRICARE Overseas Program (TOP) and foreign claims for non-active duty beneficiaries including Medicare eligibles (when Medicare Part B is purchased). Coverage includes Europe, the Pacific region, Latin America, Asia, Africa, Canada, and covered through Remote Overseas areas or TRICARE Select options per the TOP contract. The scope of health care includes medical, dental, inpatient care, laboratory work, health care testing, and other health care services equivalent to the DoD TRICARE program. Benefits are exclusively pass-through costs. Excluded from the benefits program is custodial care claims, special and emergent care claims and Alaska claims. Also includes overseas health care provided

I. Description of Operations Financed (cont.)

under the Supplemental Care program. Excludes demonstrations, congressional mandates and other health care expensed in Miscellaneous Purchased Health Care, PE 0807751.

Miscellaneous Purchased Health Care - Includes costs specifically for providing benefits identified in Title 32 of the Code of Federal Regulations Part 199 (32 CFR 199) authorized under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) for the following beneficiaries: (a) retired military personnel and (b) spouses and dependent children of active duty, retired, or deceased military personnel in civilian facilities and by private practitioners. Also includes costs for special education and institutional care in civilian facilities for disabled dependents of active duty personnel covered under the Program for Persons with Disabilities (PFPWD) Act. Includes administrative, management, and health care costs for Custodial Care, Special and Emergent Care Claims, Alaska Claims, Autism Benefit, Laboratory Developed Tests (LDTs), State Vaccine Program, TRICARE/Medicare dual eligible beneficiaries program (e.g., TRICARE Dual Eligible Fiscal Intermediary Contract - TDEFIC) transition assistance programs and TRICARE Reserve Select (TRS).

Miscellaneous Support Activities – Includes the miscellaneous administrative costs and support contract expenses for various programs, demonstrations and other congressionally mandated programs or actions not directly providing health care. Programs financed include: Contracts for marketing and education functions, claims auditing, surveys, e-Commerce, Case Management services, the National Quality Monitoring Service and on-going support from Defense Enrollment Eligibility Reporting System (DEERS) are reflected in this program element.

II. Force Structure Summary:

TRICARE healthcare benefits under contracts in private sector care (PSC) programs are available to approximately 9.6 million DoD beneficiaries are eligible to receive TRICARE benefits. The Managed Care Support Contractors (MSCS) provide uniform health care plan options to eligible beneficiaries when they enroll with their regional contractor. Effective January 1, 2018 Defense Health Agency simplified the benefit structure of TRICARE as two options, PRIME (HMO like) or Select, the new Preferred Provider option (PPO). The long standing TRICARE Standard and Extra options both transition to the Select option. TRICARE benefits include Dental Care via contracts with civilian dental practitioners as well. TRICARE benefits are available to approximately 2.4 million Medicare eligible beneficiaries of Military Retirees, Survivors or special eligibility groups who qualify and received benefits from Medicare program by law. These costs are paid from the Medicare Eligible Retiree Health Care Fund (MERHCF) and are excluded from the baseline budget for PSC contracts.

--FY 2019 Private Sector Care actuals including all funding sources is $15,522,099
--FY 2020 Private Sector Care current estimate is based on first quarter disbursement data which shows a 7 percent increase over disbursements for the same period in FY 2019. We are continuing to monitor execution as we work towards determining the factors contributing to the increase.

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III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
1. Pharmaceuticals Purchased Health Care	791,073	829,460	0	0.0	829,460	792,559	822,222
2. National Retail Pharmacy	851,561	931,018	-10,000	-1.1	921,018	960,244	994,926
3. Managed Care Support Contracts	6,098,189	6,178,513	-55,825	-0.9	6,122,688	6,075,661	6,052,019
4. MTF Enrollee Purchased Care	3,330,234	2,894,375	0	0.0	2,894,375	3,392,399	3,505,298
5. Dental Purchased Care	289,677	297,540	0	0.0	297,540	290,258	297,791
6. Uniformed Services Family Health Program	545,842	622,340	0	0.0	622,340	570,040	594,611
7. Supplemental Care - Health Care	1,324,653	1,397,552	0	0.0	1,397,552	1,479,013	1,537,278
8. Supplemental Care - Dental	90,821	70,371	0	0.0	70,371	93,008	96,915
9. Continuing Health Education/Capitalization	335,261	378,198	0	0.0	378,198	354,268	344,021
10. Overseas Purchased Health Care	340,650	349,768	0	0.0	349,768	245,402	251,463
11. Miscellaneous Purchased Health Care	1,078,217	955,363	0	0.0	955,363	1,168,851	1,220,432
12. Miscellaneous Support Activities	130,108	136,508	0	0.0	136,508	127,246	124,911
Total	**15,206,286**	**15,041,006**	**-65,825**	**-0.4**	**14,975,181**	**15,548,949**	**15,841,887**

1. FY 2019 actuals includes $277,066K for OCO.
2. FY 2019 actuals includes $408,080K OMNIBUS Reprogramming approved by Congress to mitigate increased healthcare claims to Private

III. Financial Summary ($ in thousands)

Sector medical facilities and practitioners. (Procurement appropriation provides $308,480K and $99,600K from Restoration/Modernization BAG 7 DHP O&M).
3. FY 2019 actuals do not include Department of Defense Medicare-Eligible Retiree Health Care Fund (MERHCF) of $7,926,557K (O&M Only).
4. FY 2019 actuals do not include $315,218K funds execution from FY 2018/FY 2019 Carry Over account.
5. FY 2020 current estimate excludes $287,487K for OCO.
6. FY 2020 current estimate does not include anticipated Department of Defense Medicare-Eligible Retiree Health Care Fund (MERHCF) of $8,664,293K (O&M Only).
7. FY 2021 estimate excludes $296,828K for OCO.
8. FY 2021 estimate does not include anticipated Department of Defense Medicare-Eligible Retiree Health Care Fund (MERHCF) of $8,981,540K (O&M Only).
9. FY 2020 Current Estimate for PSC reflects revised estimated shortfall of $573,768K funding required to satisfy contractual obligations of the Defense Health Program.

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**15,041,006**	**15,548,949**
Congressional Adjustments (Distributed)	-65,825	
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	**14,975,181**	
Fact-of-Life Changes (2020 to 2020 Only)		
Subtotal Baseline Funding	**14,975,181**	
Supplemental	287,487	
Reprogrammings	573,768	
Price Changes		530,606
Functional Transfers		
Program Changes		-237,668
Current Estimate	**15,836,436**	**15,841,887**
Less: Wartime Supplemental	-287,487	
Normalized Current Estimate	**15,548,949**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 President's Budget Request (Amended, if applicable)		**15,041,006**
1. Congressional Adjustments		-65,825
a. Distributed Adjustments		
1) Historical Underexection:	-38,500	
2) Medical Reform Implementation:	-17,325	
3) Pharmaceuticals Excess Growth:	-10,000	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		**14,975,181**
2. OCO and Other Supplemental Enacted		287,487
a. OCO and Other Supplemental Requested		
1) OCO and other Supplemental	287,487	
3. Fact-of-Life Changes		
FY 2020 Baseline Funding		**15,262,668**
4. Reprogrammings (Requiring 1415 Actions)		573,768
a. Increases		
1) Risk Assessment of Health Care Claims Trending for FY 2020:	573,768	
Resources required for reprogramming in FY 2020 to support costs attributed to increased Managed Care Support Contractor enrollment, utilization of Urgent Care facilities, walk-in clinics, primary care providers office visits, care delivered in homes for injectable drubs or durable medical equipment and care at Residential Treatment Centers or Psychiatric Hospitals. Additional costs increase attributed to price growth not reflected in the FY 2020 baseline budget. FY 2019 baseline actuals were $14,929,220K.		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
The FY 2020 Enacted baseline is $14,975,181. This reflects zero increase for normal inflation. The FY 2020 Current Estimate reflects the projected growth for Private Sector Care based on the 1st Quarter disbursement data for FY 2020.		
Revised FY 2020 Estimate		**15,836,436**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		-287,487
FY 2020 Normalized Current Estimate		**15,548,949**
6. Price Change		530,606
7. Functional Transfers		
8. Program Increases		
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
c. Program Growth in FY 2021		
9. Program Decreases		-237,668
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
c. Program Decreases in FY 2021		
1) a. Implements 2017 NDAA Benefit Reform to Lower Overall Healthcare and Administrative Costs:	-134,000	
Incremental program decrease driven by recent administrative and health benefit reforms. Changes include: -$106.0 million incremental savings derived for phased implementation of benefit reforms in NDAA 2017 creating TRICARE Select (a Preferred Provider		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
enrollment Option) and modernizing fee structure for enrollment and co-pays for enrollees of TRICARE. -$28.0 million incremental reduction for estimated savings associated with the phased in adoption of Centers for Medicare and Medicaid (CMS) reimbursement rates for Long Term Care Hospitals and Inpatient Rehabilitation Facilities providing care to TRICARE beneficiaries. (FY 2021 increased to $155 million from $127 million in FY 2020) FY 2020 Private Sector Care baseline funding is $14,975,181K		
2) b. Reduced Contract Requirements: Reduced requirements based on incorporation of the FY 2019 actual execution into the FY 2021 budget estimate for contract requirements. Incorporating this analysis into budgetary projections combined with better pricing methodologies, and a review of historical deobligation trends resulted in improved requirement identification and resource management. FY 2020 Private Sector Care baseline funding is $14,975,181K	-44,407	
3) c. Updated Population Mix Projections: Incremental reduction which incorporates program changes based on projected change in population mix for Active Duty, Active Duty Family Member, Retiree and Retiree Family Member. FY 2020 Private Sector Care baseline funding is $14,975,181K	-24,203	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
4) d. Realignment of Information Technology Systems to IM/IT Budget Activity Group: Realignment of resources to Information Management/Information Technology from Private Sector Care to account for the budgeting and execution of the IT operating costs for the TRICARE Encounter Data (TED) and Patient Encounter Processing and Reporting (PEPR) applications within the Tri-Service IM/IT program element. Realignment allows for managerial oversight and execution of all IT funding within the Health Information Technology Directorate. The FY 2020 Miscellaneous Support Activities baseline funding is $136,508K.	-17,883	
5) e. Pharmacy Co-Pay Changes for NDAA 2018: Incremental reduction to Pharmacy requirements for revisions to the Co-Pay tables for various drug categories offered under TRICARE Pharmacy benefits structure. The FY 2020 Pharmacy Mail Order baseline budget request is $829,460K and the Retail Pharmacy baseline budget is $921,018K.	-8,191	
6) f. Implements Reduction to Headquarters Contracts: Reduces requirements to contracts with professional support services, studies or analytic services as directed to implement Headquarters Contract Reductions across the enterprise. The FY 2020 Miscellaneous Support Activities baseline funding is $136,508K.	-4,984	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
7) g. Defense Wide Review (DWR) - Additional Cost Reduction By Implementing Automated Payroll Deduction Payment of TRICARE Enrollment Fees: Reduced costs estimated for implementation of automated payroll deduction to collect TRICARE enrollment fees saving fees charged for credit card usage by beneficiaries to pay monthly enrollment to TRICARE. The FY 2020 Managed Care Support Contracts baseline funding is $6,122,688K.	-4,000	
FY 2021 Budget Request		**15,841,887**

IV. Performance Criteria and Evaluation Summary:

	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate	FY 2019-2020 Change	FY 2019-2021 Change
Private Sector Care Enrollment:		(Non-OCO)	(Non-OCO)		
PSC TRICARE Prime Enrollees	1,221,250	1,214,101	1,216,868	-7,149	2,767
PSC TRICARE Select Enrollees	2,016,536	1,992,562	1,987,567	-23,974	-4,995
PSC Non-Enrolled (Standard/Extra)	157,348	156,330	156,673	-1,018	343
TRICARE Overseas Enrollees	416,112	418,336	420,259	2,224	1,923
Total MCS and Overseas :	3,811,246	3,781,329	3,781,367	-29,917	38
TRICARE Dental Program Enrollment	680,845	681,269	681,694	424	425
Uniformed Services Family Health Plan	98,323	103,919	109,834	5,596	5,915

Private Sector Care System Workload:	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate	FY 2019-2020 Change	FY 2019-2021 Change
Outpatient-Visits	65,648,325	64,709,234	64,884,661	-939,091	175,427
Outpatient-Weighted (Relative Value Units, RVUs)	127,027,349	125,246,986	125,596,389	-1,780,363	349,403
Inpatient-Admissions	315,586	311,271	312,191	-4,315	920
Inpatient-Weighted (Relative Weighted Products, RWPs)	296,275	292,188	293,030	-4,087	842
Prescriptions:					
Pharmacy-Retail	19,414,536	19,702,515	20,343,035	287,979	640,520
Pharmacy-Mail Order	4,904,462	4,852,276	4,866,700	-52,186	14,424
Pharmacy-Total PSC	24,318,998	24,554,791	25,209,735	235,793	654,944

General Notes : a) All data excludes MERHCF and Dual Eligibles (TDEF). (b) New contract (Jan 2018) has two regions and overseas. The benefit changed from: Prime, Standard, Extra and TRICARE Overseas to Prime, Select and Overseas, (c) workload is all workload provided in Private Sector locations regardless of patient's enrollment status, (d) enrollment is to PSC MCS providers and Overseas Program not to the Military Treatment Facilities.

Workload Notes : (a) FY 2019 PSC workload includes OCO and Baseline in Actuals reported.
b) FY 2020 and FY 2021 CONUS and OCONUS Healthcare workload projections are based on Non-OCO Population trends for Prime and all others.
c) OCO estimated at 1% of total workload in E, W, and Overseas (Roughly 95K OCO divided by Roughly 9.5M TRICARE eligibles)
d) FY 2020 Pharmacy projection of script growth uses eligible Population trends and percentage increase in script volume from FY2018 to FY2019.
e) FY 2021 Pharmacy projection of script growth uses eligible Population change.
f) Dental Enrollment estimates for FY 2020 and FY 2021 is based on rate of change from FY 2018 to FY 2019.
g) USFHP enrollee estimates for FY 2020 and FY 2021 is based on rate of change from FY 2018 to FY 2019.

IV. Performance Criteria and Evaluation Summary:

Refer to the Personnel Summary in Section V.

V. Personnel Summary

Civilian FTEs changes: FY 2019 Civilian FTEs are not documented supporting the actual execution of Private Sector Care funds for Civilian salaries as reported in the Civilian OP-32 rows by DHA Comptroller. FY 2020 and FY 2021 have no FTEs programmed.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Private Sector Care

VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	630	18	-648	0	0	0	0
199 TOTAL CIV COMPENSATION	**630**	**18**	**-648**	**0**	**0**	**0**	**0**
308 Travel of Persons	493	10	-14	489	10	0	499
399 TOTAL TRAVEL	**493**	**10**	**-14**	**489**	**10**	**0**	**499**
647 DISA Enterprise Computing Centers	0	0	10,119	10,119	132	80	10,331
699 TOTAL DWCF PURCHASES	**0**	**0**	**10,119**	**10,119**	**132**	**80**	**10,331**
915 Rents (Non-GSA)	5,000	100	-5,100	0	0	0	0
920 Supplies & Materials (Non-Fund)	4	0	3	7	0	0	7
921 Printing & Reproduction	1,350	27	4,182	5,559	111	6	5,676
924 Pharmaceutical Drugs	1,598,007	58,967	95,828	1,752,802	64,678	-332	1,817,148
925 Equipment Purchases (Non-Fund)	0	0	3,720	3,720	74	4	3,798
932 Mgt Prof Support Svcs	34,737	695	20,234	55,666	1,113	-1,161	55,618
933 Studies, Analysis & Eval	5,974	119	-918	5,175	104	-161	5,118
955 Other Costs (Medical Care)	4,500	176	-4,676	0	0	0	0
959 Other Costs (Insurance Claims/Indmnties)	11	0	-8	3	0	0	3
960 Other Costs (Interest and Dividends)	1,017	20	-1,037	0	0	0	0
984 Equipment Contracts	14,502	290	-14,792	0	0	0	0
986 Medical Care Contracts	13,479,321	525,693	-330,501	13,674,513	463,566	-215,544	13,922,535
987 Other Intra-Govt Purch	4,998	100	19,517	24,615	492	-6,748	18,359
989 Other Services	41,476	830	-39,568	2,738	55	2	2,795
990 IT Contract Support Services	14,266	285	-1,008	13,543	271	-13,814	0
999 TOTAL OTHER PURCHASES	**15,205,163**	**587,302**	**-254,124**	**15,538,341**	**530,464**	**-237,748**	**15,831,057**
Total	**15,206,286**	**587,330**	**-244,667**	**15,548,949**	**530,606**	**-237,668**	**15,841,887**

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Consolidated Health Support

I. Description of Operations Financed: This Budget Activity Group encompasses nine functions supporting military medical readiness and delivery of patient care worldwide. The nine medical support functions include:

Examining Activities - Resources administering physical examinations and performing evaluations of medical suitability for military service. Includes resources required for Armed Forces Examination and Entrance Stations and the Department of Defense (DoD) Medical Examination Review Board.

Other Health Activities - Resources organizations and functions that support the provision of health care for DoD beneficiaries. Examples include: central medical laboratories, medical services squadrons, Army and Navy Medicine regional commands, public affairs, the Women, Infants and Children Program, humanitarian actions, family advocacy, patient affairs, and contribution of resources for the DoD beneficiaries' health care at the CAPT James A. Lovell Federal Health Care Center North Chicago, IL.

Military Public/Occupational Health - Resources military public health manpower, supplies, permits, certification and licensure fees, support equipment, and the associated requirements specifically identified for management, direction, and operation of disease prevention and control. Examples include: epidemiology, medical entomology, drinking water safety, monitoring hazardous waste disposal, food and facility sanitation, wellness/health promotion and education, community health nursing, medical intelligence, disease and climate illness, disease prevention and control, hearing conservation, and health and injury surveillance.

Veterinary Services - Resources the management, direction and operation of DoD's worldwide veterinary missions, as well as veterinary support requirements for other specified federal agencies. Includes veterinary care of government-owned animals,

I. Description of Operations Financed (cont.)

procedures involving animals in clinical investigation departments, and control of zoonotic and veterinary public health diseases.

Military Unique - Other Medical Activities - Resources unique military medical functions and activities that have a relationship to the size of the military population supported. Examples of programs include: physiological training units, drug abuse detection laboratories, optical repair and fabrication laboratories, medical logistics offices, medical materiel activities, deployment planning, plans, operation and training offices in military treatment facilities, and Department of Defense Armed Forces Blood Program.

Aeromedical Evacuation System - Resources the operation and administration of the Aeromedical Evacuation System, costs associated with intra- and inter-theater patient transportation, and operations to sustain the Aeromedical Evacuation Epidemiology Laboratory.

Service Support to Other Health Activities - Resources to support USTRANSCOM's Global Patient Movement Requirements Center.

Joint Pathology Center (JPC) - Resources manpower, equipment, and the associated operation and maintenance of the JPC including pathology education, consultation, and diagnostic testing provided to the Department of Defense and other Federal Agencies.

Federal Advisory Committee Act (FACA) Advisory Board Activities - Resources the FACA Advisory Board and subcommittee functions, meetings, support, studies and other activities. FACA is composed of those committees, boards, commissions, councils, task forces and similar groups which have been established to advise officers and agencies in the executive branch of the Federal Government and must follow the regulatory and

I. Description of Operations Financed (cont.)

statutory requirements related to FACA in Title 5 Appendix, United States Code (U.S.C.).

II. Force Structure Summary:

Consolidated Health Support includes staffing and contracts to support the Defense Health Agency, the Army Medical Command, Navy Bureau of Medicine and Surgery, and the Air Force Medical Services by providing the active duty and beneficiary population with complementary health care such as laboratory testing, immunizations, physical exams, humanitarian actions, epidemiology and entomology testing, disease prevention and control, veterinary services, physiological training, optical repair and fabrication, intra- and inter-theater patient transportation, and pathology education and consultation. In addition, this Budget Activity Group funds operations at the Army and Navy regional medical commands, the Armed Forces Blood Program, the medical logistics offices, deployment planning, and provides resources for USTRANSCOM's Global Patient Movement Requirements Center.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Consolidated Health Support

III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
1. Examining Activities	100,494	104,303	-1,104	-1.1	103,199	103,199	14,886
2. Other Health Activities	518,269	532,867	-28,284	-5.3	504,583	504,583	381,356
3. Military Public / Occupational Health	505,028	533,379	2,556	0.5	535,935	534,867	456,687
4. Veterinary Services	29,112	32,192	-985	-3.1	31,207	31,207	2,921
5. Military Unique-Other Medical Activities	671,160	607,460	3,527	0.6	610,987	610,987	453,112
6. Aeromedical Evacuation System	52,349	137,482	-8,892	-6.5	128,590	128,590	2,579
7. Service Support to Other Health Activities-TRANSCOM	1,855	2,484	64	2.6	2,548	2,548	691
8. Joint Pathology Center	26,764	23,236	-441	-1.9	22,795	22,795	23,977
9. Support to FACA Advisory Board Activities	1,387	2,133	-41	-1.9	2,092	2,092	2,060
Total	**1,906,418**	**1,975,536**	**-33,600**	**-1.7**	**1,941,936**	**1,940,868**	**1,338,269**

1. FY 2019 actuals includes $2,426K for OCO.
2. FY 2020 estimate excludes $2,800K for OCO.
3. FY 2021 estimate excludes $3,198K for OCO.
4. The Department of Defense transferred O&M funding of $113,000K in FY 2019 and will transfer $127,000K in FY 2020 and $130,404K in FY 2021 to the Joint Department of Defense - Department of Veterans Affairs Medical Facility Demonstration Fund (James A. Lovell Federal Health Care Center Great Lakes) established by section 1704 of Public Law 111-84 (National Defense Authorization Act for FY 2010). Additionally, the Department of Defense transferred $15,000K of O&M funding in FY 2019 and will transfer the same amount in FY 2020 and FY 2021 to the DoD-VA Health Care Joint Incentive Fund (JIF) as required by Section 8111 of Title 38 of the United States Code (USC) and Section 722 of Public Law 111-92 (National Defense Authorization Act for FY 2016).

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**1,975,536**	**1,940,868**
Congressional Adjustments (Distributed)	-33,600	
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	**1,941,936**	
Fact-of-Life Changes (2020 to 2020 Only)	-1,068	
Subtotal Baseline Funding	**1,940,868**	
Supplemental	2,800	
Reprogrammings		
Price Changes		44,972
Functional Transfers		-605,386
Program Changes		-42,185
Current Estimate	**1,943,668**	**1,338,269**
Less: Wartime Supplemental	-2,800	
Normalized Current Estimate	**1,940,868**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
FY 2020 President's Budget Request (Amended, if applicable)		**1,975,536**
1. Congressional Adjustments		-33,600
a. Distributed Adjustments		
1) Aeromedical Evacuation System Excess Growth	-7,100	
2) Historical Underexecution:	-37,500	
3) Program Increase - Therapeutic Service Dog Training Program:	11,000	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		**1,941,936**
2. OCO and Other Supplemental Enacted		2,800
a. OCO and Other Supplemental Requested		
1) OCO	2,800	
FY 2020 Overseas Contingency Operations request.		
3. Fact-of-Life Changes		-1,068
a. Functional Transfers		
b. Technical Adjustments		
1) Increases		
2) Decreases		
a) FY 2020 Adjustments for Civilian pay raise and subsequent revisions impacting BAG 3:	-1,068	
FY 2020 Baseline Funding		**1,943,668**
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2020 Estimate		**1,943,668**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		-2,800
FY 2020 Normalized Current Estimate		**1,940,868**
6. Price Change		44,972

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
7. Functional Transfers		-605,386
a. Transfers In		
1) a. Operation Live Well (OLW) Initiative Transfer: Transfers funding for the Operation Live Well (OLW) Initiative from the Office of the Under Secretary of Defense for Personnel and Readiness to the Defense Health Agency's Public Health Division. OLW formulates concurrent Department of Defense strategies for optimizing Total Force Fitness (TFF) doctrine for all three military components in support of Combatant Commands OLW, through the development of analytic performance measures and policy formulation. The Operation Live Well Initiative aims to identify effective TFF initiatives and aligns the Military Departments policies and business practices to improve the warrior capability and capacity across the Department of Defense community. Funding will measurably improve human performance optimization and readiness of the Total Force through addressing eight domains of fitness via data-informed and synchronized policy, programs, and business practices. The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.	8,500	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
b. Transfers Out		
1) a. Defense-Wide Review (DWR) - Medical Readiness	-613,328	

Transfer to the Military Departments:

In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, the Defense Health Program has transferred the Service Medical Readiness activities which occur outside of the Military Treatment Facility to the Military Departments. This transfer allows the medical force structure to meet the operational requirements in support of the National Defense Strategy and support the Congressionally-mandated reforms to the Military Health System. The following Medical Readiness programs have been identified as functions that would be more effectively and efficiently run by the Military Departments and support development of a Ready Medical Force and will not have an adverse impact to the delivery of healthcare in the Military Treatment Facilities.

(a) Army Medicine: (-$346,139K and -2,315 Civilian Full-Time Equivalents)

(1) The US Military Entrance Processing Command (MEPCOM) has the responsibility for initial entry medical screening and processing activities for all Services. Army is the executive agent for the MEPCOM. Medical examinations are used to determine applicants' physical qualifications for enlistment.

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals

These examinations help ensure applicants can meet the demanding physical challenges of basic training and military service.

(2) The Army Public Health Center (APHC) sustains joint readiness by identifying and assessing current and emerging health threats, developing and communicating public health solutions, and assuring the quality and effectiveness of the Army's Public Health Enterprise.

(3) Army's Veterinary Medicine Services is responsible for policy development and oversight of command missions regarding Animal Medicine and Food Protection matters. Animal Medicine includes veterinary care of government-owned animals and procedures involving animals in clinical investigation departments.

(4) Soldier Readiness Processing (SRP) sites are designed to ensure soldiers are medically ready to deploy to hazardous locations around the world. The SRP provides periodic review of medical readiness, as well as last minute assessments before a rapid deployment.

(5) The Optical Fabrication mission provides single-vision and multi-focal prescription lenses for a variety of frames for all Soldiers and support to other Services. Frames are provided upon entry to the Service, during deployment processing, or after annual screenings. Frames provided include standard issue and frame-of-choice glasses, inserts

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
for gas masks and eye protection, and flight goggles for pilots. (6) Army Medical Logistics Command (AMLC) is the Army's primary medical logistics and sustainment command, responsible for managing the global supply chain and medical materiel readiness across the Total Force. AMLC's provides worldwide operational medical logistics support, including fielding, sustainment, medical maintenance, and centralized management of readiness-enabling contingency programs. (7) The U.S. Army Medical Research and Development Command (MRDC) executes the science and technology program to investigate medical solutions for the battlefield with a focus on various areas of biomedical research, including military infectious diseases, combat casualty care, military operational medicine, medical chemical and biological defense, and clinical and rehabilitative medicine. (8) U.S. Army Medical Center of Excellence (MEDCoE) is responsible to envision and design responsive Army Medicine capabilities and structure that support the fielded force and the future force. MEDCoE provides specialized skills training, graduate and post-graduate education, and professional development education programs.		
(b) Air Force Medical Service: (-239,367K and -338 Civilian Full-Time Equivalents)		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
(1) The 711th Human Performance Wing (711 HPW) advances human performance in air, space, and cyberspace through research, education, and consultation. The Wing's primary focus areas are aerospace medicine, Human Effectiveness Science and Technology, and Human Systems Integration. The 711 HPW functions as a Joint Department of Defense Center of Excellence for human performance sustainment and readiness, optimization, readiness. (2) The Air Force Research Laboratory (AFRL) plays an integral role in leading the discovery, development and integration of affordable warfighting technologies for our air, space and cyberspace force. AFRL provides a diverse portfolio of science and technology ranging from fundamental to advanced research and technology development. (3) USAF School of Aerospace Medicine (USAFSAM) is an institute for research, education, and worldwide operational consultation in Aerospace Medicine. USAFSAM has guided the advancement of aerospace medicine and human performance from the beginnings of aviation through the onset of the space age and into the present. (4) Aerospace physiologists study the changes in physiological parameters associated with the aerospace environment. Their expertise is employed in the training of aviators and support staff, to encourage the anticipation of the physical challenges associated with aviation and space travel		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**

challenges such as acceleration, ejection, spatial disorientation, and hypoxia. They incorporate practical aspects of human factors into mission preparation to ensure that aviators and mission specific staff are aware of the impact of issues like fatigue, stress, nutrition, and circadian rhythms.
(5) En-route Patient Staging (ERPS) provides support and continuity of medical care for patient movement, and serves as an integral link in the global patient movement system. The ERPS provides medical personnel and equipment necessary for 24-hour patient staging operations, patient transportation to/from aircraft, and administrative processes for tracking patients transiting the Aeromedical Evacuation system worldwide. It is designed for short-term inpatient medical-surgical nursing care and limited emergent intervention.

(c) Navy Bureau of Medicine and Surgery: (-27,822K and -71 Civilian Full-Time Equivalents)
(1) Industrial Operations provides resources in support of Sailor and Marine Corps requirements specifically tied to disease and illness prevention in the operational environment. Key functions under this program include, Armed Services Blood Program Office (ASBPO), the Industrial Hygiene Program, and Naval Infectious Disease Diagnosis Laboratory

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
(NIDDL), Service Blood Donor Testing Program, and Health Surveillance. (2) Navy Readiness Reporting and Preparedness provides resources for the deployment preparation and administrative support of Sailors and Marines. Includes readiness programs primarily focused on Sailor and Marine well-being and tracking such as: the Navy Undersea Warfighter Health Readiness Program, the Readiness Cost Reporting System (RCRP), Navy Expeditionary Health Service Support (NEHSS) Capabilities Requirements Analysis Program, and Command Strategic Tracking Accountability Reporting Support (C-STARS).		
2) b. Army Medical Civilian Personnel Transfer to the Department of the Army: Transfers four (4) civilian full-time equivalents and associated funding from the Army Medical Command's Military Unique/Occupational Health program element program element to the Department of the Army to accurately reflect the transfer of assets to the Department of the Army, in compliance with Military Health System reform initiatives.The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.	-558	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
8. Program Increases		
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
c. Program Growth in FY 2021		
9. Program Decreases		-42,185
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
c. Program Decreases in FY 2021		
1) a. Military Health System Management Headquarters Reform:	-24,817	

Continues the implementation of the Military Health System organizational reforms required by the National Defense Authorization Acts of FY 2017 and FY 2019 focused on efforts to reduce redundant and unnecessary headquarters overhead while building a structure that drives improved outcomes for readiness, health, quality and cost. Reform efforts reduces the Defense Health Agency contract requirements in the Examining Activities (-$709K), Military Public/Occupational Health (-$6,876K), Other Health Activities (-$1,951K), Military Unique - Other Medical ($15,150K), support to FACA Advisory Board Activities (-$131K) program elements (PE). The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
2) b. Reduced Resource Requirements: Reduces funding for Military Unique - Medical program element due to a consolidation of workstreams/efforts and projected budget execution. Funding reductions will better align actual execution to programming without creating an adverse impact to the program's mission. Detailed analysis was performed on various programs within the Military Unique - Other Medical program element. Reductions were based on the incorporation of updated budgetary projections and better pricing methodologies following this in-depth analysis of the Consolidated Health Support's requirement, resulting in improved requirements identification and resource management. The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.	-10,886	
3) c. One Less Compensable Day: In accordance with OMB Circular A-11, Section 85.5C, reduces civilian pay to account for one fewer paid day in FY 2021 (261 paid days) than in FY 2020 (262 paid days). The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.	-3,134	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
4) d. Military Health System Major Headquarters Reduction:	-2,916	
Continues the Management Headquarters reduction associated with Section 702, Reform of the Administration of the Defense Health Agency and Military Treatment Facilities in NDAA 2017. Reduction result from efforts to eliminate duplicative activities carried out by the elements of the Defense Health Agency and the military departments. By Service, funds are reduced from Army Medical Command (-$1,324K) and from Air Force Medical Services (-$1,592K). Efforts reduces the Defense Health Agency requirements in the Other Health Activities (-$2,614K) and Military Unique - Other Medical (-$302K) program elements (PE). The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.		
5) f. Veterinary Services Information Management Systems Realignment:	-432	
Realigns three (3) civilian full-time equivalents and associated funding from Consolidated Health Support's Military Public/Occupational Health program element to Information Management/Information Technology, Tri-Service IM/IT program element to account for the budgeting and execution of the IT capability for the Veterinary		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
Service Information Management System (VSIMS). This realignment allows for oversight of the VSIMS IT capability, which supports DoD food protection (food safety plus food defense), veterinary public health, and operational missions at over 700 locations around the world. In addition, this realignment supports the Defense Health Agency's effort to finalize the standardization of information technology at DHA under the Enterprise Support Activity construct. The FY 2020 Consolidated Health Support baseline funding is $1,941,936K. The FY 2020 Consolidated Health Support Baseline contractor staffing is 3,204 CMEs. The FY 2020 Consolidated Health Support Baseline civilian staffing is 7,267.		
FY 2021 Budget Request		**1,338,269**

IV. Performance Criteria and Evaluation Summary:

Performance Criteria and Evaluation Summary

	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate	Change FY 2019/2020	Change FY 2020/2021
1) Active Duty Force Structure	1,590,677	1,601,680	1,607,119	11,003	5,439
2) Military Entrance Processing Stations Workload (000's)	315	345	0	30	(345)
3) Spectacles/Inserts Fabricated (000's)	1507	1547	892	40	(655)
4) Veterinary Lab Procedures (000's)	80	92	0	12	(92)

1) Active Duty Force Structure: The FY 2019 to FY 2020 and FY 2020 to FY 2021 changes in Active Duty Force Structure support Department of Defense's increases in Active Duty end strength.

2) Military Entrance Processing Stations Workload: The Military Entrance Processing Command (MEPCOM) projects an increase in applicant workload for FY 2019 to FY 2020 to produce qualified accessions to achieve Department of Defense Armed Forces required escalating manning levels. Updated accession goals published and holding at 10K over the baseline year of FY17. Methodolgy for calculating workload is still roughly 1.3 medical examinations to produce an accession. From FY 2020 to FY 2021, a decrease of workload is being reported because funding for the Military Entrance Processing Stations is expected to transfer to the Department of the Army in FY 2021.

3) Spectacles/Inserts Fabricated: The FY 2019 to FY 2020 increase is due to a combination of historical workload growth,the introduction of 6 new Frame of Choice (FOC)frames and patient directed/self-ordering solution, Joint Spectacle Prescription Entry Cloud-based Solution (JSPECS), that is expected to come to fruition within the next two fiscal years. Once available, JSPECS will remove several access barriers to optical services for eligible DoD beneficiaries and thus further increase optical orders. We anticipate a 1% increase in the first year of JSPECS as version 1.0 will be limited to Active Duty (AD) orders only. As ensuing versions are rolled out we are forecasting a potential 3-4% increase in orders. From FY 2020 to FY 2021, a decrease is being reported because the Army's Optical Fabrication is transferring to the Department of the Army in FY 2021.

4) Veterinary Lab Procedures: The increase from FY19 to FY20 is due to increased destination monitoring requirements from Veterinery Services and increased testing capabilities with Regional Health Command Europe (RHC-E) leading to increased in-house testing. Anticipate 8-10% annual increase in food and vector-borne disease diagnostic testing to support readiness of the warfighter, the FY20 NDAA, and align with projected military end strength. Overdue logistic and equipment requirements for the Department of Defense Military Working Dog Serum Repository. Replace critical equipment that is past life cycle and/or out of maintenance funds/support. Also start replacing equipment which no longer fits the laboratory's needs or is outdated (better technology, increased efficiency). The FY20 to FY21 decrease is the result of the Army's Veterinary Services funding transfer to the Department of the Army in FY 2021.

V. Personnel Summary	FY 2019	FY 2020	FY 2021	Change FY 2019/ FY 2020	Change FY 2020/ FY 2021
Active Military End Strength (E/S) (Total)	7,112	7,636	7,354	524	-282
Officer	2,175	2,236	2,180	61	-56
Enlisted	4,937	5,400	5,174	463	-226
Active Military Average Strength (A/S) (Total)	7,277	7,375	7,495	98	120
Officer	2,225	2,206	2,208	-19	2
Enlisted	5,052	5,169	5,287	117	118
Civilian FTEs (Total)	8,393	7,267	4,536	-1,126	-2,731
U.S. Direct Hire	7,854	6,827	4,340	-1,027	-2,487
Foreign National Direct Hire	183	95	94	-88	-1
Total Direct Hire	8,037	6,922	4,434	-1,115	-2,488
Foreign National Indirect Hire	324	313	71	-11	-242
Reimbursable Civilians	32	32	31	0	-1
Average Annual Civilian Salary ($ in thousands)	110.7	113.5	118.5	2.8	5.0
Contractor FTEs (Total)	3,035	3,204	2,917	169	-287

Explanation of changes in Active Military End Strength:
The increase from FY 2019 to FY 2020 (+524) includes a 10% end strength reduction for Major Headquarters Activities (-160; Army: -145, Navy: -15), mission transfers to the Military Departments for Medical Readiness Programs: (Army: -14), and internal realignments from In-House Care (+441) and Base Operations/Communications (+257) in support of the Navy Bureau of Medicine and Surgery's emerging requirements. The decrease

from FY 2020 to FY 2021 (-282) includes a 10% end strength reduction for Major Headquarters Activities (-160; Army: -145, Navy: -15), transfers to the Defense Health Agency for Major Headquarters Activities (-64: Army: -14, Navy -32, AF: -18), transfers to the military departments for Medical Headquarters activities (Army: -11); transfers to the military departments for medical readiness programs (Navy: -47).

Explanation of changes in Civilian FTEs:
The decrease from FY 2019 to FY 2020 (-1,126) includes mission transfers to the Military Departments for medical readiness: (-584: Army: -345, Navy: -139, Air Force: -100); transfers to the Defense Health Agency for Major Headquarters Activities (-358: Army: -248, Navy -159, DHA +49); 10% FTE reduction for Major Headquarters Activities (Navy: -22); Army Material Readiness (+13), U.S. Military Entrance Processing Command (+41); the 25% reduction to the Military Health System (MHS) major headquarters as directed in the Terms of Reference of the "Military Health System Reform" memorandum signed by the Deputy Secretary of Defense on April 27, 2017 (-14); and Service headquarters execution and internal reprogramming adjustments (-202: Army: +91, Navy: -119, Air Force: +59, DHA: -85, NCR: -157, USUHS: +9). Manpower adjustments by component are: Army Medical Command (-458), Navy Bureau of Medicine and Surgery (-439), Air Force Medical Service (-45), Defense Health Agency (-36), National Capital Region (-157), and Uniformed Services University of the Health Services (+9). The decrease from FY 2020 to FY 2021 (-2,731) includes the 25% reduction to the Military Health System (MHS) major headquarters as directed in the Terms of Reference of the "Military Health System Reform" memorandum signed by the Deputy Secretary of Defense on April 27, 2017 (-13: Army: -10, Air Force: -3); realignment of the Veterinary Services Information Management Systems from Army Consolidated Health Support to the Defense Health Agency (Army: -3); Army Medical Command Medical Headquarters transfer to the Department of the Army (-4); Service headquarters execution and internal reprogramming adjustments (Air Force: +13); and the transfer of Consolidated Health Support FTEs following the Defense Wide Review to the Department of

the Army (-2,315), the Department of the Navy (-71), and the Department of the Air Force (-338). Manpower adjustments by component are: Army Medical Command (-2,332), Navy Bureau of Medicine and Surgery (-71), and Air Force Medical Service (-328).

Explanation of changes in Contractor FTEs:
The increase from FY 2019 to FY 2020 (+169) includes execution adjustments and reflects the net impact of the Medical Headquarters transfer from the Services to the Defense Health Agency (DHA). Changes from FY 2019 to FY 2020 are accounted for in the Examining Activities program element (+27), Military Public/Occupational Health program element (+264), Other Health Activities program element (-95), Military Unique-Other Medical program element (-28), Support to Federal Advisory Committee Act Advisory Board Activities program element (+1). The decrease from FY 2020 to FY 2021 (-287) includes execution adjustments and reflects the net impact of the Medical Headquarters transfer from the Services to the Defense Health Agency (DHA), reductions due to contract consolidation efforts, reductions associated with Biological Equipment Maintenance Support, reductions due to Phase 2/3 transfer of Clinical Quality Management, reductions due to decreased support of Audiology, Flight, and Operation Medicine. Changes from FY 2020 to FY 2021 are accounted for in the Examining Activities program element (-186), Military Public/Occupational Health program element (-9), Other Health Activities program element (-5), Military Unique-Other Medical program element (-85), and Aeromedical Readiness program element (-2).

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VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	903,725	25,124	-127,696	801,153	12,338	-282,918	530,573
199 TOTAL CIV COMPENSATION	**903,725**	**25,124**	**-127,696**	**801,153**	**12,338**	**-282,918**	**530,573**
308 Travel of Persons	43,714	874	-18,101	26,487	530	-7,884	19,133
399 TOTAL TRAVEL	**43,714**	**874**	**-18,101**	**26,487**	**530**	**-7,884**	**19,133**
401 DLA Energy (Fuel Products)	66	0	-5	61	-3	-52	6
402 Service Fund Fuel	1	0	2	3	0	0	3
412 Navy Managed Supply, Matl	813	17	-830	0	0	0	0
414 Air Force Consol Sust AG (Supply)	294	24	-318	0	0	0	0
416 GSA Supplies & Materials	2,918	58	-1,840	1,136	23	-632	527
417 Local Purch Supplies & Mat	5,398	108	-2,884	2,622	52	-146	2,528
422 DLA Mat Supply Chain (Medical)	4,410	-18	-2,688	1,704	2	32	1,738
499 TOTAL SUPPLIES & MATERIALS	**13,900**	**189**	**-8,563**	**5,526**	**74**	**-798**	**4,802**
503 Navy Fund Equipment	7	0	22	29	1	0	30
506 DLA Mat Supply Chain (Const & Equip)	197	-1	-196	0	0	0	0
507 GSA Managed Equipment	449	9	-340	118	2	-120	0
599 TOTAL EQUIPMENT PURCHASES	**653**	**8**	**-514**	**147**	**3**	**-120**	**30**
601 Army Industrial Operations	43	0	-43	0	0	0	0
633 DLA Document Services	121	1	-60	62	0	1	63
635 Navy Base Support (NAVFEC Other Support Services)	22	0	-11	11	0	0	11
671 DISA DISN Subscription Services (DSS)	5	0	10	15	1	-4	12
675 DLA Disposition Services	289	0	-287	2	0	-1	1
679 Cost Reimbursable Purchase	295	6	-296	5	0	-1	4
680 Building Maint Fund Purch	0	0	357	357	0	7	364
699 TOTAL DWCF PURCHASES	**775**	**7**	**-330**	**452**	**1**	**2**	**455**
706 AMC Channel Passenger	30,139	603	2,698	33,440	669	-34,109	0
707 AMC Training	142	28	-170	0	0	0	0

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
771 Commercial Transport	3,659	73	-629	3,103	62	-1,642	1,523
799 TOTAL TRANSPORTATION	**33,940**	**704**	**1,899**	**36,543**	**731**	**-35,751**	**1,523**
901 Foreign National Indirect Hire (FNIH)	21,941	0	-2,009	19,932	399	-16,906	3,425
912 Rental Payments to GSA (SLUC)	102	2	-99	5	0	0	5
913 Purchased Utilities (Non-Fund)	617	12	-629	0	0	0	0
914 Purchased Communications (Non-Fund)	2,368	47	-836	1,579	32	-523	1,088
915 Rents (Non-GSA)	12,816	256	-9,606	3,466	69	-1,138	2,397
917 Postal Services (U.S.P.S)	19	0	31	50	1	-45	6
920 Supplies & Materials (Non-Fund)	109,262	2,185	-38,174	73,273	1,465	-3,145	71,593
921 Printing & Reproduction	1,207	24	270	1,501	30	-298	1,233
922 Equipment Maintenance By Contract	9,900	198	-5,325	4,773	95	-2,120	2,748
923 Facilities Sust, Rest, & Mod by Contract	2,716	54	-2,408	362	7	1,624	1,993
924 Pharmaceutical Drugs	4,564	178	49,713	54,455	2,124	606	57,185
925 Equipment Purchases (Non-Fund)	43,227	865	62,951	107,043	2,141	-83,993	25,191
926 Other Overseas Purchases	15,782	316	-16,055	43	1	0	44
930 Other Depot Maintenance (Non-Fund)	12	0	413	425	9	0	434
932 Mgt Prof Support Svcs	142,547	2,851	-32,638	112,760	2,255	-13,974	101,041
933 Studies, Analysis & Eval	19,903	398	-4,475	15,826	317	-9,765	6,378
934 Engineering & Tech Svcs	7,725	155	-7,536	344	7	0	351
936 Training and Leadership Development (Other Contracts)	91	2	-93	0	0	0	0
937 Locally Purchased Fuel (Non-Fund)	70	0	115	185	4	-8	181
955 Other Costs (Medical Care)	106,431	4,151	-31,577	79,005	3,081	-44,487	37,599
959 Other Costs (Insurance Claims/Indmnties)	64	1	-65	0	0	0	0

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
960 Other Costs (Interest and Dividends)	128	3	1,203	1,334	27	0	1,361
964 Other Costs (Subsistence and Support of Persons)	1,579	32	-1,175	436	9	-27	418
984 Equipment Contracts	3,521	70	-3,591	0	0	0	0
985 Research & Development, Contracts	2,727	0	-2,727	0	0	0	0
986 Medical Care Contracts	133,338	5,201	248,111	386,650	15,079	-53,257	348,472
987 Other Intra-Govt Purch	44,360	887	23,281	68,528	1,371	-3,670	66,229
988 Grants	13,329	267	-2,507	11,089	222	-11,267	44
989 Other Services	183,452	3,669	-75,608	111,513	2,230	-72,732	41,011
990 IT Contract Support Services	25,913	518	-10,448	15,983	320	-4,977	11,326
999 TOTAL OTHER PURCHASES	**909,711**	**22,342**	**138,507**	**1,070,560**	**31,295**	**-320,102**	**781,753**
Total	**1,906,418**	**49,248**	**-14,798**	**1,940,868**	**44,972**	**-647,571**	**1,338,269**

FY 2019 to FY 2020 Notes:
1. Medical Headquarters realignments and reductions and Army manpower increases at MEPCOM and U. S. Army Medical Research and Materiel Command (USAMRMC) drive the change in Civilian Compensation. (OP-32 Line 199).
2. Medical Headquarters realignments, increases for Patient Movement Item (PMI) equipment, readiness programs, and Long-Term Opioid Therapy Pilot Program drive the change in Supplies and Materials (OP-32 Line 920.1).
3. An increased requirement for Patient Movement Item equipment drives the change in Equipment Purchases (Line 925).
4. The realignment of the Vision Center of Excellence (VCOE) from Navy to the Defense Health Agency drives the changes in Management and Professional Support Services and Studies (OP-32 Line 932), Analysis and Evaluation (Line 933).
5. Reduced resource requirements drive the change in Other Costs (OP-32 Line 955), Medical Care Contracts (Line 986) 6. Reduced resource requirements, Medical Headquarters realignments and an increase to Army material readiness drive the change to Other Services (Line 989.1).
6. Reduced resource requirements, Medical Headquarters realignments and an increase to Army material readiness drive the change to Other Services (Line 989.1).

FY 2020 to FY 2021 Notes:
1. Medical Headquarters realignments and reductions and readiness transfers drove the change in Civilian Compensation (OP-32 Line 101)
2. Medical readiness transfers to the Military Departments drive the change in Supplies and Materials, AMC Channel Messenger, Equipment Purchases (Non-Fund), Other Costs-Medical Care (OP-32 Line 706, Line 920.1 Line 925, and Line 955).
3. Medical Headquarters Contract Reductions, Medical Readiness Transfers, and Operation Live Well Initiative drives the change in Mgt Professional Support Services (OP-32 Line 932).
4. Medical Headquarters Contract Reductions, Medical Readiness Transfers, and the James A. Lovell Federal Health Care Center drives the change in Medical Care Contracts (OP-32 Line 986).

5. Medical Readiness Transfers to the Military Department, Reduced Resource Requirements, and Operation Live Well Initiative Transfer to DHA drives the change in Other Services (OP-32 Line 989)

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Information Management

I. Description of Operations Financed:

Service Medical Information Management/Information Technology (IM/IT) – Provides resources for Military Treatment Facility IM/IT activities, infrastructure, Service Medical specific systems; and Functional Area Applications (Service-Unique); Communications and Computing Infrastructure to include Information Assurance (IA), long haul/wide area and deployable tactical/shipboard communications, office automation and video-teleconferencing; and related technical activities including information architecture, data standardization and data interoperability. Specifically excludes Base Communications and Voice Communications requirements which are funded in the Base Operations / Communications Budget Activity Group.

Military Health System (MHS) Information Management/Information Technology IM/IT Support Programs – Provides resources for services that are either contracted or provided by other DoD agencies. Provides for modifications to contractor owned IM/IT systems to meet congressional and other mandated changes; changes or modifications to other DoD agencies' IM/IT systems to comply with changes in medical regulatory guidance; commercially purchased IM/IT related services to support the Managed Care Support Contracts' compliance requirements; and funding to support centrally managed office automation, video-teleconferencing and related technical activities including information architecture, data standardization and data interoperability. Specifically excludes funding for centrally managed or Service Medical IM/IT systems including acquisition of centrally developed systems.

I. Description of Operations Financed (cont.)

Military Health System (MHS) Tri-Service Information Management/Information Technology (IM/IT) – Provides resources for the Military Health System (MHS) centrally managed, Tri-Service IM/IT programs to include development of standardized information systems designed to meet Tri-Service functional requirements at all echelons of command in the medical functional area. The Tri-Service IM/IT program defines, acquires/develops, maintains and oversees the design, enhancement, operation, acquisition, sustainment and management of information systems, related IT infrastructure and communications in support of MHS activities.

Information Technology Development – Integrated Electronic Health Record – Provides resources for the acquisition, maintenance, enhancement, operation, sustainment, and program management in support of the Integrated Electronic Health Record (iEHR) information program and associated capabilities for the CAPT James A. Lovell Federal Health Care Center, North Chicago, IL and the Interagency Program Office (IPO).

Department of Defense (DoD) Healthcare Management System Modernization Program (DHMSM) – Provides resources for the deployment and related technical sustainment of Information Technology (IT) software and hardware baseline in support of healthcare delivery and the DoD Healthcare Management System Modernization (DHMSM) Major Automated Information System within the Military Health System (MHS). This includes funding for IT equipment and recurring replacement, production software licenses and renewal/version upgrades, system deployment/implementation activities and initial system user training. This program also includes funding to support the program office operations (e.g.,

I. Description of Operations Financed (cont.)

Government and Vendor) and commercial software maintenance, hardware maintenance, system administration, other operations costs, recurring training and education, and recurring telecommunications and data/system hosting and storage requirements in support of the DHMSM IT requirements. This program is established in accordance with the joint memo from USD(C) and USD(AT&L) titled "Joint Memorandum on Major Defense Acquisition Program and Major Automated Information System Program Resource Transparency in Department of Defense Budget Systems" dated June 27, 2013.

DoD Medical Information Exchange (DMIX) – Provides resources for the Military Health System's procurement and sustainment of Information Technology software, hardware, interfaces, infrastructure and other related IT activities in support of healthcare interoperability and medical information exchange programs. The Defense Medical Information Exchange (DMIX) Program includes funding for any IT capability initiative supporting the seamless exchange of standardized health data among Department of Defense, Department of Veterans Affairs, other federal agencies, private sector healthcare providers, and benefits administrators. Activities under this program element provide the capability for healthcare providers to access and view comprehensive and current patient health records from a variety of data sources which enable healthcare providers to responsively make more informed patient care decisions. This program element also includes funding to support program office operations (e.g., Government and Vendor), system administration, other operations costs, recurring training and education, and recurring telecommunications and data/system hosting and storage capability in support of requirements.

I. Description of Operations Financed (cont.)

Theater Medical Information Program - Joint (TMIP - J) – Provides resources to integrate components of the Military Health System (MHS) sustaining base systems and the Services´ medical information systems to ensure continuous interoperable medical support for mobilization, deployment and sustainment of all Theater and deployed forces in support of any mission. TMIP-J enhances the clinical care and information capture at all levels of care in operational environments, transmits critical information to combatant commanders, supports the evacuation chain for combat and non-combat casualties, and forges the theater links of the longitudinal health record to the sustaining base and the Department of Veterans Affairs. TMIP-J is the medical component of the Global Combat Support System. TMIP-J provides information at the point of care and to the operational, tactical and strategic decision makers through efficient, reliable data capture, and data transmission to a centralized operational database. This delivers TMIP-J´s four pillars of information support through the electronic health record, (1) integrated medical logistics, (2) patient movement and tracking, (3) medical command and control through data aggregation and reporting; and (4) analysis tools for trend analysis and situational awareness. TMIP-J fulfills the premise of "Train as you fight" through the integration of components which are identical or analogous to systems from the sustaining base. TMIP-J adapts and integrates these systems to specific operational requirements and assures their availability in reduced communications settings of the deployed environment through store and forward capture and transmission technology. TMIP-J supports sustainment for service and other modules to include but are not limited to: AHLTA-Theater, Mobile Computing Capability, Maritime Medical Modules, Medical Situational Awareness Theater (MSAT), TMIP Composite Health Care System Cache, Theater Medical Data Store, Medical Logistics and Special Projects. The purpose of this program

I. Description of Operations Financed (cont.)

element is to capture the continuing sustainment activities of TMIP-J products until replaced by the initial implementation of the modernized electronic health record solution acquired by the Defense Healthcare Management Systems Modernization Program and other follow-on Joint Operational Medicine Information Systems products that replace current capabilities.

Joint Operational Medicine Information System (JOMIS) – Provides resources for the procurement, deployment and sustainment of the Joint Operational Medicine Information Systems (JOMIS) capabilities for DoD operational medicine locations. Funding will provide: procurement support for integrating medical capabilities under a joint concept of operations; support field medical operations with regard to oversight and evaluation of critical command, control, communications, computer and intelligence (C4I) health decision support systems; support for integrating medical capabilities under a joint concept of operations; sustainment support to JOMIS software baselines, comprised of the Military Health System GENESIS electronic health record (EHR) capability and legacy operational medicine modules not replaced by the new EHR capabilities; and support for the upgrading or replacement of legacy operational medicine modules. The delivered products will support all echelons of care through an aggregation of medical data and situational reports that serves the theater of operations as well as the Continental United States sustaining base medical missions. It establishes the means and a standard for tying existing, developing, and future medical information systems (software and equipment) into an interoperable system that supports Military Departments. Funding will provide integrated, automated medical information addressing the functional areas, command and control (including planning functions), medical logistics, patient

I. Description of Operations Financed (cont.)

regulation and evacuation, medical threat/intelligence, health care delivery, manpower/training, and medical capabilities assessment and sustainment analysis.

Cybersecurity – Provides resources for the design, build, fielding, development, refresh and sustainment of information technology (IT) supporting: the DoD's ability to maintain an appropriate level of confidentiality, integrity, authentication, non-repudiation and availability; the information and information assets; the documentation of threats and vulnerabilities; the trustworthiness of users and interconnecting systems; and the minimization of the impact of impairment or destruction to the DoD information system(s). The Military Health System cybersecurity is a form of defensive cybersecurity designed for the protection of information against unauthorized interception, modification, fabrication, and interruption of data in transit and at rest. Resources will encompass boundary protection and intrusion detection systems; assessment and authorization; developing and maintaining information assurance (IA) policy and governance; network continuity; continuous monitoring; training; Public Key Encryption (PKE) and Public Key Infrastructure (PKI) implementation; and computer network defense. Includes DHA Risk Management Framework that provides a process that integrates security and risk management activities into the system development life cycle. The risk-based approach to security control selection and specification considers effectiveness, efficiency, and constraints due to applicable laws, directives, Executive Orders, policies, standards, or regulations. These activities related to managing organizational risk are paramount to an effective information security program and can be applied to both new and legacy systems within the context of the system development

I. Description of Operations Financed (cont.)

life cycle and the Federal Enterprise Architecture. This program element will not be used to capture resources for investments that are embedded in another system or for IT security management, as described by DoD CIO as unclassified, non-weapon system resources needed for Certification & Accreditation, Public Key Infrastructure, virus protection, malware, and/or firewalls.

Military Health System (MHS) Desktop to Datacenter (D2D) – Provides resources for the design, build, testing, installation, fielding, upgrades and sustainment of information technology (IT) supporting the DoD's ability to provide and maintain infrastructure and enterprise support services for Military Health System (MHS) centrally managed IT systems in all managed health care regions worldwide. Resources will encompass: Circuits, Network Service Operations Center, MHS Enterprise Service Operations Centers (MESOC) Regional Services, Video Network Center, Lifecycle Management (Asset Management Support Services and Enterprise Software Management), Performance Planning Management, and Boundary Services and Server Sustainment. This includes the following: (1) Network Security Management Service (NSMS): Seamless integrated Wide, Local and Wireless Network allowing health care providers/staff to move from hospital to hospital and authenticate to all IT services without the need of separate accounts; (2) Desktop as a Service (DaaS): Desktop design standardization across the application, desktop and server environments allowing providers/staff ability to move from one exam room to another within the medical facility and have access to information; (3) Compute and Storage Management (CSMS): Centrally managed integrated, robust computing infrastructure that provides a standard method to host applications and the ability to use single applications to support health care encounters; (4) Directory Services Enterprise

I. Description of Operations Financed (cont.)

Management (DSEM): Centralized, secure access and authentication capability to network resources that allows providers and staff to all IT services without the need of multiple accounts; (5) Global Service Center (GSC): Consolidated MHS enterprise IT Service Desk allowing for a single point of contact for all customers regardless of physical location.

II. Force Structure Summary:

This program funds concept exploration, management and sustainment of automated information systems, communications and computing infrastructure, related technical activities and information assurance supporting military medical readiness and promoting quality healthcare services to members of the Armed Forces, their families, and others entitled to DoD healthcare.

Workload Introduction:
The Information Management/Information Technology (IM/IT) workload data presented in the Performance Criteria and Evaluation Summary section is designed to give greater insight and a clearer depiction of the Defense Health Agency's IM/IT work for: (1) Military Treatment Facility IT Support; (2) MHS Enterprise Cyber Security Support; (3) Defense Health Agency Global Service Center; (4) Desktop to Datacenter and Medical Community of Interest (Med-COI) Deployments; (5) DoD Healthcare Management Systems Modernization (DHMSM) planned deployment schedule (6) DOD Medical Information Exchange and Interoperability (DMIX); and (7) Theater Medical Information – Joint (TMIP-J).

III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
1. Service Medical IM/IT	345,594	169,301	0	0.0	169,301	257,585	132,744
2. DHP IM/IT Support Programs	37,082	34,906	0	0.0	34,906	34,906	35,451
3. Tri-Service IM/IT	1,306,146	595,990	-5,650	-1.0	590,340	644,099	884,820
4. Integrated Electronic Health Record (iEHR)	21,839	17,931	0	0.0	17,931	18,000	10,191
5. DoD Healthcare Management System Modernization (DHMSM)	356,314	455,647	-21,000	-4.6	434,647	433,988	480,551
6. DoD Medical Information Exchange and Interoperability (DMIX)	47,423	47,503	0	0.0	47,503	47,503	53,590
7. Theater Medical Information Program - Joint (TMIP-J)	58,205	89,042	-17,800	-20.0	71,242	71,651	2,721
8. Joint Operational Medicine Information System (JOMIS)	11,533	17,206	-3,400	-19.8	13,806	13,987	4,213
9. Cybersecurity	0	150,929	0	0.0	150,929	151,398	138,574
10. Military Health System Desktop to Datacenter (D2D)	0	426,133	0	0.0	426,133	484,337	297,055
Total	**2,184,136**	**2,004,588**	**-47,850**	**-2.4**	**1,956,738**	**2,157,454**	**2,039,910**

1. FY 2019 actuals do not reflect Department of Defense (DoD) Medical Eligible Retiree Health Care Fund (MERHCF) of $900K (O&M only).
2. FY 2019 actuals includes $125,059K which supported the Desktop to Datacenter (D2D) Program Implementation at the Defense Health Agency, Desktop to Datacenter implementation at Army Medical Command and Air Force Medical Services, and Military Treatment Facilities (MTFs) local IT Support at Army Medical Command and National Capital Region-Medical Directorate.
3. FY 2019 actuals reflects $44,221K of FY 2019/2021 procurement funds realigned to FY 2019 O&M.

III. Financial Summary ($ in thousands)

4. FY 2020 estimate does not reflect DoD MERHCF of $1,000K (O&M only).
5. FY 2020 estimate includes $198,000K in anticipate IM/IT unfunded requirements which provide MTFs local IT Support at Army Medical Command, Navy Bureau of Medicine and Surgery, Air Force Medical Services, and National Capital Region-Medical Directorate, as well as Desktop to Datacenter and Functional Area Applications IM/IT operations at the Defense Health Agency.
6. FY 2021 estimate does not reflect DoD MERHCF of $971K (O&M only).
7. The following are Information Management/Information Technology (IM/IT) Budget Activity Group internal program element realignments:
(a) Integrated Electronic Health Record (iEHR) program element funds realigned to DoD Medical Information Exchange (DMIX): Realigns $6,739K from iEHR to DMIX to standardize accounting for budgeting and execution of the Increment 1, Single Sign-On/Context Management funds in the DMIX program element. All other functions previously reported under iEHR Increment 1 are now reported under the Defense Medical Information Exchange (DMIX) initiative.
(b) Desktop to Datacenter funds realigned to Tri-Service IM/IT: Realigns $923K from Desktop to Datacenter to Tri-Service IM/IT to standardize accounting for budgeting and execution of the existing Deputy Assistant Director, Information Operations, Performance Resource Management Division staff within the Tri-Service IM/IT program element.
(c) Medical Operations Data Systems Program Management Office Realignment: Realigns funding for five (5) FTEs ($599K) and support costs ($282K) from the Defense Health Agency, Tri-Service IM/IT program element to the Army Medicine, Service Medical IM/IT program element to standardize accounting for budgeting and execution of the Medical Operations Data Systems (MODS) Program Management Office by the Army Medical Command. MODS is the current Enterprise System for Individual Medical Readiness and supports Global Medical Force Readiness. Army Medicine will transfer these funds to the Department of the Army in FY 2021.
(d) Establish Cybersecurity Baseline: The Defense Health Agency established the Cybersecurity program element and baseline funding, FTEs, and contract support in PB2020 through realignment of funds and associated FTE costs from the Tri-service IM/IT program element ($132,960K and 36 FTEs) and the Service Medical IM/IT program element ($17,969K and 163 FTEs) within the same OP32 lines. Cybersecurity funds will resource the design, build, fielding, development, refresh and sustainment of information technology supporting the DoD's ability to maintain an appropriate level of confidentiality, integrity, authentication, non-repudiation and network availability. Includes the Defense Health Agency Risk Management Framework that provides a process that integrates security and risk management activities into the MHS IM/IT system infrastructure. The risk-based approach to security control selection and specification considers effectiveness, efficiency, and constraints due to applicable laws, directives, Executive Orders, policies, standards, or regulations.
(e) Establish Desktop to Datacenter Baseline: The Defense Health Agency established the Desktop to Datacenter baseline funding, FTEs, and contract support in PB 2020 through realignment of funds and associated FTE costs to the Desktop to Datacenter program element from the Tri-service IM/IT program element ($426,133K and 240 FTEs) within the same OP32 lines. Desktop to Datacenter funds will resource the design, build, testing, installation, fielding, upgrades and sustainment of information technology (IT) supporting the DoD's ability to provide and maintain infrastructure and enterprise support services for Military Health System (MHS) centrally managed IT systems in all managed health care regions worldwide. Funds the following infrastructure and enterprise support services: (1) Network Security Management Service (NSMS): Seamless integrated Wide, Local and Wireless Networks; (2) Desktop as a Service (DaaS): Desktop standardization across the application, desktop and server environments; (3) Compute and Storage Management (CSMS): Centrally managed integrated, robust computing and storage infrastructure; (4) Directory Services Enterprise Management (DSEM): Centralized, secure access and authentication capability to network resources; (5) Global Service Center (GSC): Consolidated MHS enterprise IT Service Desk allowing for a single point of contact for all customers regardless of physical location.

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**2,004,588**	**2,157,454**
Congressional Adjustments (Distributed)	-47,850	
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	**1,956,738**	
Fact-of-Life Changes (2020 to 2020 Only)	2,716	
Subtotal Baseline Funding	**1,959,454**	
Supplemental		
Reprogrammings	198,000	
Price Changes		43,179
Functional Transfers		-52,078
Program Changes		-108,645
Current Estimate	**2,157,454**	**2,039,910**
Less: Wartime Supplemental		
Normalized Current Estimate	**2,157,454**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
FY 2020 President's Budget Request (Amended, if applicable)		**2,004,588**
1. Congressional Adjustments		-47,850
a. Distributed Adjustments		
1) DoD Healthcare Management Systems Excess Growth:	-21,000	
2) Historical Underexecution:	-5,650	
3) Joint Operational Medicine Information Systems Excess Growth:	-3,400	
4) Theater Medical Information Program-Joint Excess Growth:	-17,800	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		**1,956,738**
2. OCO and Other Supplemental Enacted		
3. Fact-of-Life Changes		2,716
a. Functional Transfers		
b. Technical Adjustments		
1) Increases		
a) FY 2020 Adjustments for Civilian pay raise and subsequent revisions impacting BAG 4:	2,716	
FY 2020 Baseline Funding		**1,959,454**
4. Reprogrammings (Requiring 1415 Actions)		198,000
a. Increases		
1) Desktop to Datacenter / Med-COI Deployment: Funds the Defense Health Agency continued Desktop to Datacenter (D2D)/Medical Community of Interest (Med-COI) network modernization requirements for full deployment in FY 2020. Funds will support the deployment for Desktop to Datacenter throughout	58,204	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
Military Health System for both Military Treatment Facilities and support activities. Funds also sustains the implementation of already procured circuits, routers, switches, servers and network storage at over 39 locations, where D2D is already deployed. The requirement also supports effective transfer of legacy data systems on to the Med-COI Infrastructure, which is also necessary to support Risk Management Framework (RMF), Cybersecurity accreditation, and will fund medical device reconfiguration necessary for interface with the Med-COI. Funding is required to mitigate unforeseen challenges associated with operationalizing the necessary infrastructure upgrades. Funds increase the Desktop to Datacenter program element. The Defense Health Agency is currently reviewing execution requirements and potential sources for internal realignments. Final resourcing decision will be completed during mid-year review.		
2) Functional Area Application Restoral: Funds the Queuing, Medical Logistics, Data Reuse/Registries, and computational performance management applications within the Tri-Service IM/IT program element that were reduced during the Information Management/Information Technolgy reform reductions. Reductions were aimed at eliminating duplicative services with the implementation of MHS GENESIS. Due to the MHS GENESIS updated deployment schedule, it is vital to sustain these applications	53,759	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
in FY 2020 to ensure no loss of critical capability of the existing systems. Additionally, includes a small restoral to associated cybersecurity activities and DISA-provided hosting support of clinical applications. The Defense Health Agency is currently reviewing execution requirements and potential sources for internal realignments. Final resourcing decision will be completed during mid-year review.		
3) Service Medical Information Management / Information Technology Operations: Technology (IM/IT) operations within the Service Medical IM/IT program element that were reduced during the IM/IT reform reductions. Reductions were incorporated into the budget profile based on unrealistic IT manpower assumptions and meeting the MHS GENESIS scheduled deployment. Funds sustain current levels of IT operations at the Services Medical Treatment Facilities and support activities to include IT contract support, Medical IT clinical, readiness and business systems, and IT infrastructure until replaced by Desktop to Datacenter/Med-COI. Funding is required to mitigate unforeseen challenges associated with operationalizing the necessary infrastructure upgrades. By Service, funds are increased at Army Medical Command (+$32,159K), Navy Bureau of Medicine and Surgery (+$22,040K), Air Force Medical Services (+$20,972K), the National Capital Region	86,037	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
(+$10,743K), and the Defense Health Agency ($123K). The Defense Health Agency is currently reviewing execution requirements and potential sources for internal realignments. Final resourcing decision will be completed during mid-year review.		
Revised FY 2020 Estimate		**2,157,454**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		
FY 2020 Normalized Current Estimate		**2,157,454**
6. Price Change		43,179
7. Functional Transfers		-52,078
a. Transfers In		
1) Defense Information Systems Network Capital Investment:	1,347	
Transfers funding to the Defense Health Agency (DHA) from the Defense Information Systems Agency (DISA) to fund the Defense Information Systems Network (DISN) and cybersecurity investments in accordance with the agreement between DISA and the Military Departments to use DISA's Defense Working Capital Fund, Capital Investment Program. The funding DISA transferred to DHA for DISN Infrastructure and cybersecurity capital investments will be recovered by DISA through the DISN-Infrastructure Services rate. Funds increase DHA's Desktop to Data Center program element, OP32 line 671, DISA, DISN subscription services.		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
b. Transfers Out		
1) Army Medical Civilian Personnel Transfer to the Department of the Army: Transfers two (2) FTEs and associated funding from the Army Medical Command's Service Medical IM/IT program element to the Department of the Army to accurately reflect the transfer of assets to the Department of the Army, in compliance with Military Health System reform initiatives.	-211	
2) Defense Wide Review (DWR) - Medical Readiness Transfer to the Military Departments: In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, the Defense Health Program transfers the Service's Medical Readiness activities which occur outside of the Military Treatment Facilities to the Military Departments. This transfer allows the medical force structure to meet the operational requirements in support of the National Defense Strategy and support the Congressionally-mandated reforms to the Military Health System. The following Information Management/Information Technology Medical Readiness programs have been identified as functions that would be more effectively and efficiently run by the Military Departments:	-53,214	
(a) Army Medicine (-$34,119K; -24 Civilian Fulltime Equivalents): Transfers funding to the Department of the Army for Information Assurance (IA) missions		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
at the Medical Research and Development Command (MRDC), Medical Center of Excellence and Army Public Health Center. Includes funding transferred for IT medical readiness supporting: (1) The Medical Operations Data Systems Program Management Office - Army Medicine's authoritative data source for Individual Medical Readiness and Global Medical Force Readiness. (2) The Holistic Health and Fitness program - a comprehensive, integrated and immersive readiness system that generates lethal Soldiers who are physically, mentally, and spiritually ready to engage with and defeat the enemy in multi-domain operations. (3) Medical Simulation - allows providers to train on unique and specialized procedures with increased sets and repetitions that are not available at their assigned Medical Treatment Facility. (4) Virtual Health Operational Reach - designed to connect soldiers to health care globally in order to increase readiness, access, quality, and patient safety. (5) General Officer Readiness-Executive Health - designed to enhance General Officer readiness and resilience. (6) Army Medical Department Medical Skills Sustainment - designed to improve critical wartime trauma care and deliver vital medical training		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
capabilities through leveraging civilian partnership agreements. (7) US Army Medical Department Center and School - tasked to envision and design responsive Army Medicine capabilities and structure that support the fielded force and the future force. (8) Health Readiness Center of Excellence - tasked with maintaining a focus on combat casualty care. (9) The HIV Testing and Pre-Exposure Program located at Walter Reed Army Institute of Research HIV Diagnostics Reference Laboratory - focus on efforts to control HIV transmission.		
(b) Air Force Medical Services (-$17,596K): Transfers funding to the Department of the Air Force for: (1) The Aeromedical Consultation Service Electrocardiographic Library - provides the capability to evaluate, share, and manage ECGs and other cardiac-related measurements and studies from a central, verified (flying status) database for the purposes of aeromedical consultation. (2) Aeromedical Evacuation Physiological Monitoring system - which the Air Force uses to monitor patient's physiological state and during Aeromedical Evacuation missions. (3) Aeromedical Evacuation Electronic Health Record - required for Aeromedical Evacuation documentation of patient care for Aeromedical Evacuation missions.		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
(4) Air Force Medical Omnibus Web Applications Pool - Air Force Medical community uses to this tool to manage information in direct support of active duty Air Force, Air National Guard, and Air Force Reserve staff members at state side and deployed bases during peace and wartime operations.		
(5) Critical Care Air Transport Team Equipment - necessary to continuously monitor and maintain stabilization of critically ill/injured patients during enroute care in either an inter- or intra-theater mission support role.		
(6) Expeditionary Clinical Proficiency System - standardizes theater medicine system training for the entire Air Force.		
(7) Air Force Medical Information System - the Air Force uses this system to process Medical Deployment Waivers and as a Database Repository and Management for Quality Assurance and Workload analyses.		
(8)Medical Readiness Decision Support System - provides enhanced global visibility of medical materiel, personnel, and their training to allow for the efficient management and deployment of those assets.		
(9) Dolphin Ortho Modeling Software - a centrally executed dental ortho-modeling software in support of dental services Air Force-wide.		
(10)Air Force Medical Modeling & Simulation Portal - provides medical modeling and simulation training, standardized processes to systematically identify		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
and address training requirements, and advance technologies and methodologies improving health care outcomes. (11) Air Force Training Record medical readiness IT programs - captures career field training and deployment status related to training for Air Force personnel.		
(c) Navy Bureau of Medicine and Surgery (-$1,499K; -12 Civilian Fulltime Equivalents): Transfers funding to the Department of the Navy to support existing and emerging computer technologies for two major Readiness Mission functions at the Naval Medicine Operational Training Center (NMOTC): (1) Navy Medicine Operational Information Technology/Management - provides development of testing and training applications for human performance. (2) Aviation Survival training missions - hosts web services and servers, provides business support, and other technical services in support of the Readiness Mission under the Navy Medical Training Management Operations Office (NMTMO).		
8. Program Increases		213,263
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
c. Program Growth in FY 2021		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
a. MHS IMIT Legacy System Sustainment: Funds the Military Treatment Facilities (MTFs) Information Management/Information Technology (IM/IT) and Defense Health Agency IT Infrastructure ongoing operating costs. Funds ensure continued operations of 23 critical clinical, readiness, and business IM/IT systems, and provides for needed hardware/software enhancements necessary for ongoing patient care and IM/IT infrastructure sustainment. Without continued funding, the Defense Health Agency will have to shut down these systems, against the advice of the functional community, resulting in failing infrastructure and mounting IM/IT hardware/software issues. In addition, funds provide for sustainment of MTF local IT support. Without continued funding, small MTFs will see most of their contract support end, leaving these facilities in an unsustainable manning situation. Funds will better prepare the Military Treatment Facilities for the Desktop to Datacenter/Medical Community of Interest (Med-COI) implementation and a successful MHS GENESIS deployment. Funds will be executed at the Defense Health Agency for MTF Medical IM/IT operations, local IT support and management of the MHS IT infrastructure operations, and at the Medical Services for sustainment of the Services Medical IM/IT Readiness systems. The FY 2020 Information Management/Information Technology baseline funding is $1,956,738K. The FY 2020	124,506	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
Information Management/Information Technology baseline contractor staffing is 4,914 CMEs.		
2) b. Department of Defense Healthcare Management System Modernization Increase:	37,928	
Increased funding to DHMSM program element supports the following items: (a) MHS GENESIS Deployment ($30,070K): Continues funding the initial operating capabilities deployment of the MHS GENESIS Electronic Health Record (EHR) based on the DoD Healthcare Management System (DHMS) Program Executive Office's (PEO) updated deployment schedule and estimates developed for the Full Decision Deployment (FDD). In addition, provides sustainment funds for sites already operating the MHS GENESIS EHR. (b) Cerner Patient Accounting Module (CPAM) ($4,642K): Funds the CPAM and 3M 360 Encompass coding application necessary to provide integrated patient level accounting and billing functionality in the MHS GENESIS Electronic Health Record system at industry's current standard. (c) Unified Electronic Health Record HealtheIntent ($2,666K): Continues funding the requirements to add the Department of Veterans' Affairs (VA) HealtheIntent capability to the DoD electronic health record system, MHS GENESIS. HealtheIntent is a clinical application platform for population health and analytic tools, and offers a seamless longitudinal record between the DoD and VA that will		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
grant Providers and beneficiaries access to the detailed history associated with an injury, which will facilitate better decision making along the continuum of care, whether the patient be an active duty Service Member or a Veteran. (d) Cerner Clinical Application Services ($550K): Continues funding the requirements for the Cerner Clinical Application Services (CAS) and associated information technology infrastructure within MHS GENESIS. The CAS provides the capabilities to utilize analytics and data modeling; decision-support and advanced prognostic competencies; direct monitoring of detailed internal timings and workflow metrics; and analytical data that enables the Defense Health Agency to identify areas for improvement and benchmark Military Treatment Facilities against other leading health facilities. The FY 2020 DHMSM baseline funding is $434,647K and the DHMSM baseline contractor staffing is 1,433 CMEs.		
3) c. Theater Medical Information Systems-Joint: Funds increased Theater Medical Information Program-Joint (TMIP-J) requirements for additional functional capabilities necessary for TMIP-J systems to seamlessly interface with the new Electronic Health Record, MHS GENESIS. Specifically, funds buy IT Contract Support to build and sustain the data interface between TMIP-J systems and the MHS GENESIS to share patient data, and for the contractor to	17,091	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
provide instructor and end user training for all TMIP-J users. In addition, funds maintain TMIP-J operations that integrate components of the Military Health System existing IT capabilities and the Services´ medical information systems to ensure continuous interoperable medical support for mobilization, deployment and sustainment of all theater and deployed forces in support of any mission. TMIP-J is the only theater system with healthcare delivery, medical logistics, patient movement and tracking, medical command and control, tele-radiology, medical situational awareness, first responder, reporting, and maritime medicine capabilities. These funds will be realigned to the Software and Digital Technology Budget Activity, BA08 in FY 2021. The FY 2020 TMIP-J baseline funding is $71,242K and the TMIP-J baseline contractor staffing is 283 CMEs.		
4) d. Joint Operational Medicine Information System (JOMIS):	11,032	
Incremental funding to develop and sustain field operations medical capabilities for DoD medicine operational locations. Funds buy IT contract support services to develop and sustain field operational capabilities to replace the Electronic Health Record (EHR) functionality within TMIP-J. Funds support all echelons of care through an aggregation of medical data and situational reports		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
that serves the theater of operations as well as the Continental United States sustaining base medical missions. These funds will be realigned to the Software and Digital Technology Budget Activity, BA08 in FY 2021. The FY 2020 JOMIS baseline funding is $13,806K and the JOMIS baseline contractor staffing is 47 CMEs.		
5) e. Legacy Data Repository Increase: Continues funding IT contracts services to implement a flexible, scalable, and cost effective Legacy Data Repository platform to assume data management and governance for legacy Clinical and Business data systems decommissioned during the MHS GENESIS deployment. Funds increase the Tri-service IM/IT program element. The FY 2020 Tri-Service IM/IT baseline funding is $590,340K and the Tri-Service IM/IT baseline contractor staffing is 987 CMEs.	3,599	
6) f. Purchased Care Information Technology Funding Realignment: Realigns information technology funding to Information Management/Information Technology, Tri-Service IM/IT program element from Private Sector Care to account for the budgeting and execution of the IT operating costs for the TRICARE Encounter Data (TED) and Patient Encounter Processing and Reporting (PEPR) applications within the Tri-Service IM/IT program element. Realignment allows for managerial oversight and execution of all IT funding	17,883	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
within the Health Information Technology Directorate. The FY 2020 Tri-Service IM/IT program element baseline funding is $590,340K. The FY 2020 Tri-Service IM/IT program element baseline contractor is 987 CMEs.		
7) g. Veterinary Services Information Management Systems Realignment: Realigns three (3) civilian FTEs and information technology funding ($1,224K) to Information Management/Information Technology, Tri-Service IM/IT program element from Research, Development, Test and Evaluation (-$792K) and Consolidated Health Support, (3FTEs;-$432K) to account for the budgeting and execution of the IT capability for the Veterinary Service Information Management System (VSIMS). This realignment allows for oversight of the VSIMS IT capability, which supports DoD food protection (food safety plus food defense), veterinary public health, and operational missions at over 700 locations around the world. In addition, this realignment supports the Defense Health Agency's effort to finalize the standardization of information technology at DHA under the Enterprise Support Activity construct. The FY 2020 Tri-Service IM/IT baseline funding is $590,340K. The FY 2020 Tri-Service IM/IT civilian baseline staffing is 165 FTEs and the baseline contractor staffing is 987 CMEs.	1,224	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
9. Program Decreases		-321,908
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
c. Program Decreases in FY 2021		
1) a. Realignment to Software and Digital Technology Budget Activity 08: Realigns Theater Medical Information Program-Joint (TMIP-J) funds (-$87,479K) and Joint Operational Medicine Information Systems (JOIMS) funds (-$21,051K) from Information Management/Information Technology to establish the Software & Digital Technology Budget Activity in the Research, Development, Test & Evaluation (RDT&E) appropriation. The creation of the new Software & Digital Technology Budget Activity allows software capability delivery to be funded as a single budget line item, with no separation between RDT&E, production and sustainment. The FY 2020 TMIP-J baseline funding is $71,242K and the FY 2020 baseline contractor staffing is 283 CMEs. The FY 2020 JOMIS baseline funding is $13,806K and the FY 2020 baseline contractor staffing is 47 CMEs.	-108,458	
2) b. Desktop to Data Center (D2D): Adjusts the Desktop to Datacenter (D2D) funding required to resource the design, build, testing, installation, fielding, upgrades and sustainment of information technology (IT) supporting the DoD's ability to provide and maintain infrastructure and enterprise support services for Military Health	-196,892	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
System (MHS) centrally managed IT systems worldwide. Desktop to Datacenter reduced funding is achieved through the conclusion of Desktop to Datacenter/ Medical Community of Interest (Med-COI) deployment in FY 2020 and the consolidation/standardization of helpdesk support (Global Service Center), network security, data computation and data storage, global directory services, and network management services at the enterprise-level. Funds are reduced at DHA in the Desktop to Datacenter program element. The FY 2020 Desktop to Datacenter program element baseline funding request is $426,133K. The FY 2020 Desktop to Datacenter program element baseline contractor staffing request is 1,181 CMEs.		
3) c. Cybersecurity Baseline Adjustment: Adjusts the Cybersecurity program element funding required to resource the design, build, fielding, development, refresh and sustainment of information technology supporting the DoD's ability to maintain an appropriate level of confidentiality, integrity, authentication, non-repudiation and network availability. Adjustment directly reduces contractor support as the Defense Health Agency (DHA) cybersecurity program matures beyond initial actions to establish the program and baseline. The FY 2020 Cybersecurity program element baseline funding is $150,929K. The FY 2020 Cybersecurity program element baseline contractor staffing is 456 CMEs.	-12,683	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
4) d. DoD Medical Information Exchange Interoperability: Adjusts the DoD Medical Information Exchange Interoperability (DMIX) program element funding required for IT contracts support services following efficiencies achieved through consolidation of integrated Electronic Health Records (iHER) functions under DMIX. Adjustment directly reduces contractor support as the Defense Health Agency iEHR and DMIX functions mature. The FY 2020 DMIX program element baseline funding is $47,503K. The FY 2020 DMIX program element baseline contractor staffing is 159 CMEs.	-1,573	
5) e. CAPT James A. Lovell Federal Health Care Center Decreased Contracts Requirements (FHCC): Adjusts the Integrated Electronic Health Record (iEHR) program element funding required for maintenance and sustainment contracts and DISA contracts support services at the CAPT. James A. Lovell FHCC and the Interagency Program Office (IPO). Adjustment reduces contract support as the iEHR program matures, and from consolidation of iEHR programs with the DoD Medical Information Exchange Interoperability (DMIX) program. The FY 2020 iEHR baseline funding is $17,931K and the iEHR baseline contractor staffing is 10 CMEs.	-1,324	
6) f. One Less Compensable Day: In accordance with OMB Circular A-11, Section 85.5C, reduces civilian pay to account for one fewer paid	-775	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
day in FY 2021 (261 paid days) than in FY 2020 (262 paid days). The FY 2020 Information Management/Information Technology civilian compensation baseline funding is $203,058K. The FY 2020 baseline civilian staffing is 1,608 FTEs.		
7) g. Eliminate Redundant Point to Point Circuits: The Defense Health Agency reduced funds in the Information Management/Information Technology, DHP IM/IT Support Programs following coordinated action with the Defense Information Systems Agency (DISA) for migration of eligible circuits to enterprise infrastructure and to re-compete leases with opportunity for optimization. The FY 2020 DHP IM/IT Support Programs baseline funding is $34,906K and the DHP IM/IT Support Programs baseline contractor staffing is 123 CMEs.	-203	
FY 2021 Budget Request		**2,039,910**

IV. Performance Criteria and Evaluation Summary:

The Information Management/Information Technology (IM/IT) workload data presented in the Performance Criteria and Evaluation Summary section is designed to give greater insight and a clearer depiction of the Defense Health Agency's IM/IT work for: (1) Military Treatment Facility IT Support; (2) MHS Enterprise Cyber Security Support; (3) Defense Health Agency Global Service Center; (4) Desktop to Datacenter and Medical Community of Interest (Med-COI) Deployments; (5) DoD Healthcare Management Systems Modernization (DHMSM) planned deployment schedule (6) DOD Medical Information Exchange and Interoperability (DMIX); and (7) Theater Medical Information – Joint (TMIP-J).

Workload Description by Program	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate
Military Treatment Facility IT Support			
1. Provide software, hardware, and network IT support for enterprise systems at DoD medical headquarters, hospitals and medical clinics worldwide, as appropriate, to achieve operational benefits. Systems support is provided for outpatient encounters, inpatient stays, prescription issuance and management, laboratory orders and results, medical records management, claims processing, patient appointing and scheduling, medical logistics services, patient safety reporting, medical workload management, clinical data analysis, nutrition care services, blood management, staff credentialing, medical coding, medical surveillance, surgical scheduling, and more.	52 systems	46 systems	46 systems
2. Desktop to Datacenter migration of end user devices	38, 201	98,265	0
3. Shutdown/Decommission (end operational use) legacy systems that will be replaced by MHS GENESIS (site instances of systems)	13 site instances of systems	39 site instances of systems	100 site instances of systems
MHS Enterprise Services Cyber Security Support			
1. Manage cybersecurity status of systems (including networks and medical devices) enrolled in Risk Management Framework throughout the MHS)	871	871	871
2. Implement required cyber security patches (number of patches to be required cannot be determined in advance)	70%	80%	90%

IV. Performance Criteria and Evaluation Summary:

Workload Description by Program	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate
Defense Health Agency (DHA) Global Service Center (GSC)			
1. Provide enterprise help desk services in support of the MHS systems and network. Manage and resolve 95% of Critical (Priority 1) incidents within 90 minutes. [Equation: {Number of "Priority 1" incidents resolved or escalated within the 90 minute time constraint in the period of interest/Total number of "Priority 1" incidents in the period of interest} x 100. Priority categories based on type of problem and number of users affected]	243 Priority 1 Incidents 100%	300 Priority 1 Incidents ≥95%	340 Priority 1 Incidents ≥95%
2. Survey DHA Global Service Center Users, gaining a Satisfaction Survey Score of at least 4.0 of 5.0 on survey responses	26,172 survey responses (94%)	28,000 survey responses	30,000 survey responses
Desktop to Datacenter (D2D) and Medical Community of Interest (Med-COI) Deployments			
1. Deploy D2D and Med-COI so sites are GENESIS ready (Sites that are GENESIS ready have had all infrastructure work completed that is necessary for installation of MHS GENESIS and all GENESIS required systems have been migrated)	16	121	0
2. Complete updates so that sites are Totally Cutover (Sites that are Totally Cutover have had all infrastructure work completed that is required to consider all aspects of Desktop to Datacenter (D2D) and Medical Community of Interest (Med-COI) implementation fully completed and implemented)	15	122	0

IV. Performance Criteria and Evaluation Summary:

Workload Description by Program	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate
DoD Healthcare Management Systems Modernization (DHMSM) (Planned Deployment Schedule)			
1. Measure and determine maximum number of users to maintain efficiency of service. MHS GENESIS' ability to scale the number of users up without deterioration to average log in response time and average transaction response time. (# of users)	4205.00	3000.00	3000.00
2. System Operational Availability assesses the total time the system is capable of being used to perform clinical functions during a given interval – excluding scheduled downtimes. (Percentage)	90.67	99.99	99.99
DoD Medical Information Exchange and Interoperability (DMIX)			
1. Percentage of Joint Legacy Viewers (JLV) users who answer 'yes' to the question "Were you satisfied with your overall experience?" in the interactive customer evaluation (ICE) tool. (Percentage)	68.00	75.00	75.00
2. Retrieve patient-centric information pulled from disparate healthcare systems in real time for presentation in a browser in less than two (2) minutes. (Percentage) Reason: helps check the performance of related healthcare systems. This information helps to assess improvements/changes or updates to the system being evaluated. For example, a new patch could improve response times and having these measurements will help to see the improvement.	99.78	90.00	90.00
3. Software availability from an end user perspective - not counting scheduled downtime - as well as platform and network availability. (Percentage)	99.68	93.00	93.00

IV. Performance Criteria and Evaluation Summary:

Workload Description by Program	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate
Theater Medical Information – Joint (TMIP-J)			
1. **Availability:** Percentage of time the system is available not counting unscheduled downtime (Percentage)	99.99%	99.99%	99.99%
2. **Reliability:** Number of Tier III trouble tickets received monthly – tickets are related to software code updates only	<100	<100	<100
3. Maintainability: The TMIP-J software shall require no more than 3 man-hours to update a workstation. (Percentage)	90%	90%	90%

V. Personnel Summary	FY 2019	FY 2020	FY 2021	Change FY 2019/ FY 2020	Change FY 2020/ FY 2021
Active Military End Strength (E/S) (Total)	356	461	448	105	-13
Officer	109	96	88	-13	-8
Enlisted	247	365	360	118	-5
Active Military Average Strength (A/S) (Total)	349	409	455	60	46
Officer	111	103	92	-8	-11
Enlisted	238	306	363	68	57
Civilian FTEs (Total)	1,850	1,608	1,537	-242	-71
U.S. Direct Hire	1,814	1,561	1,490	-253	-71
Foreign National Direct Hire	17	16	16	-1	0
Total Direct Hire	1,831	1,577	1,506	-254	-71
Foreign National Indirect Hire	18	30	30	12	0
Reimbursable Civilians	1	1	1	0	0
Average Annual Civilian Salary ($ in thousands)	123.3	126.4	129.7	3.1	3.3
Contractor FTEs (Total)	6,905	4,914	4,437	-1,991	-477

Explanation of changes in Active Military End Strength: The increase in military end strength from FY 2019 to FY 2020 (+105) includes internal reprogramming to Information Management/Information technology from Base Operations to meet emerging requirements (Navy: +104), FY 2019 End Strength Execution adjustments (+21), mission transfers to the military departments for medical readiness programs: (Army: -13), and transfers to the Defense Health Agency program element for Major Headquarters Activities (-7). The

decrease in military end strength from FY 2020 to FY 2021 (-13) transfers to the military departments for Medical Headquarters Activities (Army: -7) and transfers to the military departments for medical readiness programs (Navy: -6).

Explanation of changes in Civilian FTEs: The decrease from FY 2019 to FY 2020 (-242) reflects adjustments based on the Air Force Medical Service's manpower analysis (+4); increase for the Individual Longitudinal Exposure Record (ILER) program (+1); Medical Headquarters realignment to Management Activities at the Defense Health Agency (-40); transfer to the Military Departments from Army Medical Command (-16) and Navy Bureau of Medicine and Surgery (-8); transfer of FTE only to the Defense Information System Agency (-31); decreases due to Desktop to Data Center reductions within the Military Health System IM/IT Infrastructure at the Army Medical Command (-24), the Air Force Medical Service (-10), the Navy Bureau of Medicine and Surgery (-7), and the National Capital Region (-1); and execution adjustments based on FY 2019 actuals (-110: DHA: +25; Navy: +20; USUHS: +3; Army:-43; Air Force -15, NCR-MD:-100). In addition, there is net zero IM/IT internal FTE realignments within Army Medical Command, the Defense Health Agency, and the National Capital Region to establish the Cybersecurity and Desktop to Datacenter program elements FTE baselines. The decrease from FY 2020 to FY 2021 (-71) reflects adjustments based on Air Force Medical Service's manpower analysis (+4); decreases due to Desktop to Data Center reductions within the Military Health System IM/IT Infrastructure at the Army Medical Command (-36) and the Navy Bureau of Medicine and Surgery (-4); FTE realignments from Army Medical Command (-10) to the DHA National Capital Region Directorate (+10) for Phase One (1) of the implementation of Section 702 of the FY 2017 NDAA; Army Medical Command Medical Headquarters transfer to the Department of the Army (-2); realignment of the Veterinary Services Information Management Systems from Army Consolidated Health Support to the Defense Health Agency (+3); realignment of the Medical Operational Data System program management office from the Defense Health Agency (-5) to Army Medical Command (+5); and the transfer of Information Management/Information technology FTEs, following the Defense Wide Review, to the Department of the Army (-24)

and the Department of the Navy (-12).

Explanation of changes in Contractor FTEs: The net decrease from FY 2019 to FY 2020 (-1,991) reflects increased contract support for the Theater Medical Information Program Joint (TMIP-J) (+85), increased contract support for the Joint Operational Medicine Information Systems (JOMIS) (+17), execution adjustment to account for actual FY 2019 contractor execution at the Defense Health Agency (-1,451), at DHMS PEO (-132), and the Medical Services (-201), and efficiencies achieved through the Military Health IT management reform and consolidation of infrastructure and legacy systems (-309). The decrease from FY 2020 to FY 2021 (-477) reflects increases for the DHMS PEO to deploy the Military Health System GENESIS (+101), increased contract support for JOMIS (+28), increased contract support for TMIP-J (2), and efficiencies achieved through consolidation of infrastructure and legacy systems (-608).

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VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	224,345	6,237	-31,666	198,916	3,063	-7,013	194,966
103 Wage Board	1,332	37	-216	1,153	18	-12	1,159
104 FN Direct Hire (FNDH)	949	26	-67	908	14	6	928
105 Separation Liability (FNDH)	12	0	0	12	0	0	12
107 Voluntary Sep Incentives	40	1	-1	40	1	-1	40
121 PCS Benefits	56	2	-58	0	0	0	0
199 TOTAL CIV COMPENSATION	**226,734**	**6,303**	**-32,008**	**201,029**	**3,096**	**-7,020**	**197,105**
308 Travel of Persons	4,939	99	-2,412	2,626	53	823	3,502
399 TOTAL TRAVEL	**4,939**	**99**	**-2,412**	**2,626**	**53**	**823**	**3,502**
416 GSA Supplies & Materials	1,064	21	-1,085	0	0	0	0
417 Local Purch Supplies & Mat	307	6	-313	0	0	0	0
422 DLA Mat Supply Chain (Medical)	45	0	-45	0	0	0	0
499 TOTAL SUPPLIES & MATERIALS	**1,416**	**27**	**-1,443**	**0**	**0**	**0**	**0**
503 Navy Fund Equipment	81	2	-83	0	0	0	0
506 DLA Mat Supply Chain (Const & Equip)	2	0	-2	0	0	0	0
507 GSA Managed Equipment	981	20	-1,001	0	0	0	0
599 TOTAL EQUIPMENT PURCHASES	**1,064**	**22**	**-1,086**	**0**	**0**	**0**	**0**
614 Space & Naval Warfare Center	797	14	6,250	7,061	441	-1,898	5,604
633 DLA Document Services	7	0	-7	0	0	0	0
635 Navy Base Support (NAVFEC Other Support Services)	0	0	362	362	7	0	369
647 DISA Enterprise Computing Centers	0	0	96,490	96,490	1,254	-8,311	89,433
671 DISA DISN Subscription Services (DSS)	130	-11	34,907	35,026	1,681	-3,209	33,498
677 DISA Telecomm Svcs - Reimbursable	171	3	-174	0	0	0	0
679 Cost Reimbursable Purchase	4	0	-4	0	0	0	0
680 Building Maint Fund Purch	0	0	2,170	2,170	0	-2,079	91

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
699 TOTAL DWCF PURCHASES	**1,109**	**6**	**139,994**	**141,109**	**3,383**	**-15,497**	**128,995**
707 AMC Training	224	43	-267	0	0	0	0
771 Commercial Transport	2	0	35	37	1	0	38
799 TOTAL TRANSPORTATION	**226**	**43**	**-232**	**37**	**1**	**0**	**38**
901 Foreign National Indirect Hire (FNIH)	1,223	0	806	2,029	41	5	2,075
912 Rental Payments to GSA (SLUC)	435	9	-444	0	0	0	0
913 Purchased Utilities (Non-Fund)	987	20	-1,007	0	0	0	0
914 Purchased Communications (Non-Fund)	2,167	43	11,755	13,965	279	-637	13,607
915 Rents (Non-GSA)	7,976	160	-7,766	370	7	0	377
917 Postal Services (U.S.P.S)	620	12	-632	0	0	0	0
920 Supplies & Materials (Non-Fund)	6,393	128	2,577	9,098	182	3,877	13,157
921 Printing & Reproduction	448	9	-45	412	8	-420	0
922 Equipment Maintenance By Contract	11,777	236	-10,623	1,390	28	-905	513
923 Facilities Sust, Rest, & Mod by Contract	726	15	-702	39	1	0	40
925 Equipment Purchases (Non-Fund)	15,280	306	144,718	160,304	3,206	-50,432	113,078
926 Other Overseas Purchases	96	2	-98	0	0	0	0
932 Mgt Prof Support Svcs	154,413	3,088	-85,241	72,260	1,445	-1,330	72,375
933 Studies, Analysis & Eval	13,322	266	-10,429	3,159	63	0	3,222
934 Engineering & Tech Svcs	203,842	4,077	-204,457	3,462	69	-1	3,530
936 Training and Leadership Development (Other Contracts)	1	0	-1	0	0	0	0
955 Other Costs (Medical Care)	8,881	346	-9,227	0	0	0	0
959 Other Costs (Insurance Claims/Indmnties)	10	0	-10	0	0	0	0
960 Other Costs (Interest and Dividends)	0	0	155	155	3	0	158
984 Equipment Contracts	121,778	2,436	-124,214	0	0	0	0

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
986 Medical Care Contracts	443,719	17,305	-440,342	20,682	807	-2	21,487
987 Other Intra-Govt Purch	130,198	2,604	-17,472	115,330	2,307	-7,036	110,601
989 Other Services	13,520	270	-9,288	4,502	90	-3,698	894
990 IT Contract Support Services	810,836	16,217	578,443	1,405,496	28,110	-78,450	1,355,156
999 TOTAL OTHER PURCHASES	**1,948,648**	**47,549**	**-183,544**	**1,812,653**	**36,646**	**-139,029**	**1,710,270**
Total	**2,184,136**	**54,049**	**-80,731**	**2,157,454**	**43,179**	**-160,723**	**2,039,910**

The following are Information Management/Information Technology (IM/IT) Budget Activity Group internal OP32 realignments:
(a) Integrated Electronic Health Record (iEHR) program element funds realigned to DoD Medical Information Exchange (DMIX): Realigns $6,739K from iEHR to DMIX to standardize accounting for budgeting and execution of the Increment 1, Single Sign-On/Context Management funds in the DMIX program element. Funds are realigned from iEHR, OP32 lines 987.1, Other Intra Government Purchases (-$2,667K), OP32 Line 680, Purchases from Revolving Funds (-$2,123K) and from OMP2 line 990, IT Contracts Support Services to DMIX, OP32 line 990, IT Contracts Support Services (+$6,739K).
(b) Desktop to Datacenter funds realigned to Tri-Service IM/IT: Realigns $923K from Desktop to Datacenter to Tri-Service IM/IT to standardize accounting for budgeting and execution of existing Deputy Assistant Director, Information Operations, Performance Resource Management Division staff within the Tri-Service IM/IT program element.
(c) Medical Operations Data Systems Program Management Office Realignment: Realigns five (5) FTEs, associated funding ($599K) and support costs ($282K) from the Defense Health Agency, Tri-Service IM/IT program element to the Army Medical Command, Service Medical IM/IT program element to standardize accounting for budgeting and execution of the Medical Operations Data Systems (MODS) Program Management Office by the Army Medical Command. MODS is the current Enterprise System for Individual Medical Readiness and supports Global Medical Force Readiness. Army Medicine will transfer these funds to the Department of the Army in FY 2021.
(d) Due to an error in selecting the correct Information Management/Information Technology (IM/IT) contracts Object Class Code, DHP under executed the IM/IT OP32 Line 614 Space and Naval Warfare Center (purchases from revolving funds), OP32 Line 671 DISA DISN Subscription Services, and OP32 Line 990, IT contracts support services. Correspondingly, DHP IM/IT over executed OP32 Line 932, Management and Professional Services, OP32 Line 933 Studies Analysis and Evaluations, OP32 Line 934, Engineering and Technical Services, and OP32 line 986, Medical Care Contracts in amounts similar to the OP32 Lines showing under execution. This error has been resolved and FY 2020 execution for OP32 Lines 614, 671, 932, 933, 934, 986, and 990 are expected to be more in line with the budgeted amounts.

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Defense Health Program
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Management Activities

I. Description of Operations Financed: This Budget Activity Group is comprised of the Army, Navy, Air Force and Defense Health Agency's Medical Headquarters; and the Defense Health Agency's functions supporting Military Health System worldwide patient care delivery.

Defense Health Agency - Resources required for the Defense Health Agency's (DHA) operating costs supporting delivery of patient care worldwide for members of the Armed Forces, family members, and others entitled to DoD health care. Oversees and maintains DoD Unified Medical Program resources for all medical activities. The Defense Health Agency became the Operation of Record in FY 2015.

Management Headquarters - Resources required for the Army Medical Command, the Navy Bureau of Medicine and Surgery, the Air Force Medical Service, and the Defense Health Agency management headquarters operating costs to coordinate and oversee the provision of health care within the Military Health System.

II. Force Structure Summary:

Force Structure Summary: Management Activities includes resources necessary to support headquarters functions outlined in DoD Instruction 5100.73, Major Department of Defense Headquarters Activities. Within the Military Health System, this includes the cost of operating the acquisition, administration, audiovisual, audit, cost analysis, data automation, financial management, information and public affairs, legal and legislative affairs, logistics, management analysis, manpower and organization, personnel, and security programs at the Defense Health Agency, the Army Medical Command, the Navy Bureau of Medicine and Surgery, and the Air Force Medical Service.

III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
Defense Health Agency	141,182	247,841	-3,000	-1.2	244,841	244,841	249,465
Management Headquarters	169,296	85,405	0	0.0	85,405	85,405	81,162
Total	**310,478**	**333,246**	**-3,000**	**-0.9**	**330,246**	**330,246**	**330,627**

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**333,246**	**330,246**
Congressional Adjustments (Distributed)	-3,000	
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	**330,246**	
Fact-of-Life Changes (2020 to 2020 Only)		
Subtotal Baseline Funding	**330,246**	
Supplemental		
Reprogrammings		
Price Changes		5,665
Functional Transfers		-731
Program Changes		-4,553
Current Estimate	**330,246**	**330,627**
Less: Wartime Supplemental		
Normalized Current Estimate	**330,246**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 President's Budget Request (Amended, if applicable)		**333,246**
1. Congressional Adjustments		-3,000
a. Distributed Adjustments		
1) Medical Reform Implementation: Medical Reform Implementation reduction in accordance with the FY 2020 enacted budget.	-3,000	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		**330,246**
2. OCO and Other Supplemental Enacted		
3. Fact-of-Life Changes		
FY 2020 Baseline Funding		**330,246**
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2020 Estimate		**330,246**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		
FY 2020 Normalized Current Estimate		**330,246**
6. Price Change		5,665
7. Functional Transfers		-731
a. Transfers In		
b. Transfers Out		
1) Air Force Medical Headquarters Realigned to the Department of the Air Force: Transfers funding for travel, and supplies and materials from the Air Force Medical Service's Management Activities program element to the Department of the Air Force to correctly align	-731	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
resources for positions that Air Force Medical Services previously transferred in FY2020.		
8. Program Increases		2,467
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
c. Program Growth in FY 2021		
1) Office of the General Counsel Realigned to the Defense Health Agency:	2,467	
Realigns Office of the General Counsel FTEs and associated funding (+24FTE; +$2,467K) to the Defense Health Agency (DHA), Management Activities program element from Base Operations (-24FTEs; -$2,467K). These FTEs represents the NCR-MD's current level of effort and capability set for civilian FTEs transferring to the DHA for use by the Office of the General Counsel at the DHA. This transfer supports the Director, DHA in assuming responsibility for the Office of the General Counsel functions and activities in the Military Health System (MHS). The FY 2020 Defense Health Agency program element baseline funding is $244,841K. The FY 2020 Defense Health Agency program element baseline civilian staffing is 1,157 FTEs.		
9. Program Decreases		-7,020
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
c. Program Decreases in FY 2021		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
1) a. Military Health System Management Headquarters Reform:	-2,042	
Continues the implementation of the Military Health System organizational reforms required by the National Defense Authorization Acts of FY 2017 and FY 2019 focused on efforts to reduce redundant and unnecessary headquarters overhead while building a structure that drives improved outcomes for readiness, health, quality and cost. Reform efforts reduces the Defense Health Agency contract requirements in the Management Headquarters (-$1,393K) and the Defense Health Agency (-$649K) program elements (PE). The FY 2020 Management Activities baseline funding is $330,246K. The FY 2020 Management Activities Baseline contractor staffing is 488 CMEs.	-1,725	
2) b. Reduced Resource Requirements:		
Continues the Management Activities resource reduction based on the incorporation of the actual budget executions into the budget estimates. Incorporating this analysis into budgetary projections coupled with better pricing methodologies resulted in improved requirements identification and resource management. Funds are reduced from the Management Headquarters (-$937K) and the Defense Health Agency (-$788K) program elements (PE). The FY 2020 Management Activities baseline funding is $330,246K. The FY 2020 Management Activities Baseline contractor staffing is 488 CMEs.		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
3) c. Military Health System Major Headquarters Reduction: Continues the Management Headquarters reduction associated with Section 702, Reform of the Administration of the Defense Health Agency and Military Treatment Facilities in NDAA 2017. Reduction result from efforts to eliminate duplicative activities carried out by the elements of the Defense Health Agency and the military departments. By Service, funds are reduced from Army Medical Command (-$2,306K) and from Air Force Medical Services (-$148K). The FY 2020 Management Headquarters program element baseline funding is $85,405K. The FY 2020 Management Headquarters program element baseline civilian staffing is 347 FTEs. The FY 2020 Management Headquarters program element baseline contractor staffing is 112 CMEs.	-2,454	
4) d. One Less Compensable Day: In accordance with OMB Circular A-11, Section 85.5C, reduces civilian pay to account for one fewer paid day in FY 2021 (261 paid days) than in FY 2020 (262 paid days). The FY 2020 Management Activities civilian compensation baseline funding is $209,322K. The FY 2020 baseline civilian staffing is 1,504 FTEs.	-799	
FY 2021 Budget Request		**330,627**

IV. Performance Criteria and Evaluation Summary:

Refer to the Personnel Summary in Section V.

V. Personnel Summary	FY 2019	FY 2020	FY 2021	Change FY 2019/ FY 2020	Change FY 2020/ FY 2021
Active Military End Strength (E/S) (Total)	1,053	777	781	-276	4
Officer	723	536	537	-187	1
Enlisted	330	241	244	-89	3
Active Military Average Strength (A/S) (Total)	1,024	916	780	-108	-136
Officer	713	630	537	-83	-93
Enlisted	311	286	243	-25	-43
Civilian FTEs (Total)	1,431	1,504	1,529	73	25
U.S. Direct Hire	1,428	1,499	1,524	71	25
Total Direct Hire	1,428	1,499	1,524	71	25
Foreign National Indirect Hire	3	5	5	2	0
Average Annual Civilian Salary ($ in thousands)	137.0	139.2	142.3	2.2	3.1
Contractor FTEs (Total)	506	488	438	-18	-50

Explanation of changes in Active Military End Strength: The decrease from FY 2019 to FY 2020 (-276) includes transfers to the Defense Health Agency program element for Major Headquarters Activities (+176: from In-House Care:-31, Consolidated Health Support:-96, Information Management/Information Technology: -7, Management Headquarters program element:-41 and Base Operations:-1); 10% end strength reduction for Major Headquarters Activities (-133: Navy: -7, AF: -126), mission transfers to the Military Departments for Medical Readiness: (-144: Army: -81, Navy: -63), transfers to the Military Departments for reductions to medical end strength: (-45 Navy), prior programming transfers to the

Military Departments for Major Headquarters Activities reductions (-55: Army-8, Navy -47) and FY 2019 End Strength Execution adjustments (-75). The increase from FY 2020 to FY 2021 (+4) includes transfers from the military departments for Major Headquarters Activities (Army: +4).

Explanation of changes in Civilian FTEs: The increase from FY 2019 to FY 2020 (+73) includes transfers to the Defense Health Agency for Major Headquarters Activities (+549: Defense Health Agency: +793; Army: -165; Air Force -79); mission transfers to the Military Departments for medical readiness: (Army: -232); 10% FTE reduction for Major Headquarters Activities (Navy: -13); 25% reduction to the Military Health System major headquarters as directed in the Terms of Reference of the "Military Health System Reform" memorandum signed by the Deputy Secretary of Defense on April 27, 2017 (Defense Health Agency: -21); Section 702, Reform of the Administration of the Defense Health Agency and Military Treatment Facilities in NDAA 2017 (Army: -20); transfer to the Office of the Assistant Secretary of Defense, Health Affairs (Defense Health Agency: -14); Service headquarters execution and internal reprogramming adjustments (Air Force: +1), and execution adjustments based on FY 2019 actuals (-177: Army Medical Command: -9; Navy Bureau of Medicine and Surgery: -64; Air Force Medical Services: -39; and the Defense Health Agency: -65). The increase from FY 2020 to FY 2021 (+25) results from Service headquarters execution adjustments at Air Force (+1); Army technical adjustments for medical readiness mission transfer to the Department of the Army (+25); Military Health System Major Headquarters reduction (Army: -24, Air Force:-1); and realignment of the Office of the General Counsel's FTEs to the Defense Health Agency (+24) from National Capital Region Medical Directorate other Budget Activity Groups.

Explanation of changes in Contractor CMEs: The decrease from FY 2019 to FY 2020 (-18) reflects the net impact of reductions to advisory and assistance services contracts

(-26), and an increase in other services from non-federal sources (+8) to consolidate services at the Defense Health Agency in accordance with the FY 2017 National Defense Authorization Act Section 702. The decrease from FY 2020 to FY 2021 (-50) reflects the net impact of decreases to advisory and assistance services contracts (-46) and decreases to IT contracts support services (-3), and other services from non-federal sources (-1) for the continued consolidation of services at the Defense Health Agency in accordance with the FY 2017 National Defense Authorization Act Section 702.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Management Activities

VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	194,587	5,410	8,164	208,161	3,206	4,956	216,323
103 Wage Board	699	19	-234	484	7	5	496
107 Voluntary Sep Incentives	500	14	-394	120	2	-2	120
121 PCS Benefits	5	0	-5	0	0	0	0
199 TOTAL CIV COMPENSATION	**195,791**	**5,443**	**7,531**	**208,765**	**3,215**	**4,959**	**216,939**
308 Travel of Persons	7,437	149	-302	7,284	146	-2,079	5,351
399 TOTAL TRAVEL	**7,437**	**149**	**-302**	**7,284**	**146**	**-2,079**	**5,351**
412 Navy Managed Supply, Matl	0	0	2	2	0	1	3
417 Local Purch Supplies & Mat	133	3	583	719	14	1	734
499 TOTAL SUPPLIES & MATERIALS	**133**	**3**	**585**	**721**	**14**	**2**	**737**
707 AMC Training	191	37	-228	0	0	0	0
771 Commercial Transport	112	2	152	266	5	1	272
799 TOTAL TRANSPORTATION	**303**	**39**	**-76**	**266**	**5**	**1**	**272**
901 Foreign National Indirect Hire (FNIH)	325	0	232	557	11	2	570
914 Purchased Communications (Non-Fund)	0	0	10	10	0	0	10
915 Rents (Non-GSA)	0	0	28	28	1	0	29
917 Postal Services (U.S.P.S)	7	0	423	430	9	0	439
920 Supplies & Materials (Non-Fund)	2,700	54	-778	1,976	40	-844	1,172
921 Printing & Reproduction	4	0	695	699	14	-87	626
922 Equipment Maintenance By Contract	2	0	253	255	5	-22	238
925 Equipment Purchases (Non-Fund)	85	2	3,156	3,243	65	0	3,308
932 Mgt Prof Support Svcs	67,340	1,347	-6,648	62,039	1,241	-5,468	57,812
933 Studies, Analysis & Eval	14,523	290	-7,070	7,743	155	-619	7,279
934 Engineering & Tech Svcs	500	10	-510	0	0	0	0
936 Training and Leadership Development (Other Contracts)	264	5	-269	0	0	0	0

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
955 Other Costs (Medical Care)	224	9	808	1,041	41	-1,068	14
959 Other Costs (Insurance Claims/Indmnties)	2	0	-2	0	0	0	0
964 Other Costs (Subsistence and Support of Persons)	9	0	6	15	0	0	15
984 Equipment Contracts	14	0	-14	0	0	0	0
987 Other Intra-Govt Purch	5,539	111	8,221	13,871	277	464	14,612
989 Other Services	11,033	221	7,294	18,548	371	190	19,109
990 IT Contract Support Services	4,241	85	-1,571	2,755	55	-715	2,095
993 Other Services - Scholarships	2	0	-2	0	0	0	0
999 TOTAL OTHER PURCHASES	**106,814**	**2,134**	**4,262**	**113,210**	**2,285**	**-8,167**	**107,328**
Total	**310,478**	**7,768**	**12,000**	**330,246**	**5,665**	**-5,284**	**330,627**

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Education and Training

I. Description of Operations Financed: This Budget Activity Group is comprised of three primary categories that provide support for education and training opportunities for personnel funded by the Defense Health Program:

Health Professions Scholarship Program - Resources for the Armed Forces Health Professions Scholarship Program (HPSP), Financial Assistance Program (FAP), and other pre-commissioning professional scholarship programs. The HPSP, FAP and pre-commissioning funds and functions will transfer in FY 2021 to the Departments of the Air Force, Army and Navy in accordance with the Defense Wide Review actions to transfer medical readiness functions outside of medical treatment facilities to the respective military departments.

Uniformed Services University of the Health Sciences (USUHS) - Resources required for operation and maintenance of the Department of Defense funded university that produces physicians, advanced practice nurses, advanced practice dentists and other health professionals from the School of Medicine, Graduate School of Nursing, Postgraduate Dental College, College of Allied Health Sciences, National Capital Area Graduate Medical Education Residency Programs and Graduate Education Programs leading to undergraduate, masters or doctoral degrees in medicine, dentistry, nursing, public health, healthcare administration, clinical psychology and the health and biomedical sciences.

Other Education and Training - Resources required for specialized skills training and professional development education programs for health care personnel at the Medical Education and Training Campus (METC), San Antonio, Texas; U.S. Army Medical Department Center and School, Fort Sam Houston, Texas; School of Aerospace Medicine, Brooks Air Force Base, Texas; Air Force medical professions education and training programs and Navy Bureau of Medicine and Surgery sponsored schools. Also includes educational programs for health care personnel at federal and private sector academic institutions and medical

I. Description of Operations Financed (cont.)

facilities. Professional development provides officer, enlisted and civilian medical personnel with the specialized skills and knowledge required to perform highly technical health service missions. Other Education and Training funds for medical readiness training functions will transfer in FY 2021 to the Departments of the Air Force, Army and Navy in accordance with the Defense Wide Review actions to transfer medical readiness functions outside of medical treatment facilities to the respective military departments.

II. Force Structure Summary:

Education and Training resources provide tuition and other educational expenses for the Armed Forces HPSP, FAP residencies, and the Health Profession Loan Repayment Program (HPLRP). USUHS resources fund operation and maintenance requirements necessary to operate a DoD-funded medical school that trains doctors; offers graduate programs for nurses and professionals in the biological sciences; provides professional development education, undergraduate degree programs through the USUHS-METC Affiliation, specialized skills training and other training necessary to accomplish the mission.

III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
1. Health Professions Scholarship Program	251,984	264,683	0	0.0	264,683	264,683	533
2. Uniformed Services University of the Health Sciences	167,760	170,639	-846	-0.5	169,793	169,793	164,299
3. Other Education and Training	325,885	358,488	-42,104	-11.7	316,384	314,833	150,859
Total	**745,629**	**793,810**	**-42,950**	**-5.4**	**750,860**	**749,309**	**315,691**

The following are Education and Training Budget Activity Group internal program elements realignments:
(a) Realigns FTEs and associated funding from the Defense Health Agency program element (-2FTEs; -$487K) to the Uniformed Services University of the Health Sciences (+2FTEs; $487K) for the Medical Education Training Command's College of Allied Health Sciences certifications and Associate and Bachelor Degree granting programs.

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**793,810**	**749,309**
Congressional Adjustments (Distributed)	-42,950	
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	**750,860**	
Fact-of-Life Changes (2020 to 2020 Only)	-1,551	
Subtotal Baseline Funding	**749,309**	
Supplemental		
Reprogrammings		
Price Changes		18,203
Functional Transfers		-488,167
Program Changes		36,346
Current Estimate	**749,309**	**315,691**
Less: Wartime Supplemental		
Normalized Current Estimate	**749,309**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 President's Budget Request (Amended, if applicable)		**793,810**
1. Congressional Adjustments		-42,950
a. Distributed Adjustments		
1) Equipment Excess Growth:	-6,900	
2) Medical Reform Implementation:	-31,850	
3) Specialized Medical Pilot Program:	2,500	
4) Supplies and Materials Excess Growth:	-6,700	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		**750,860**
2. OCO and Other Supplemental Enacted		
3. Fact-of-Life Changes		-1,551
a. Functional Transfers		
b. Technical Adjustments		
1) Increases		
2) Decreases		
a) FY 2020 Adjustments for Civilian pay raise and subsequent revisions impacting BAG 6:	-1,551	
FY 2020 Baseline Funding		**749,309**
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2020 Estimate		**749,309**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		
FY 2020 Normalized Current Estimate		**749,309**
6. Price Change		18,203
7. Functional Transfers		-488,167
a. Transfers In		
b. Transfers Out		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
1) Air Force Medical Headquarters Realigned to the Department of the Air Force:	-3,004	
Transfers travel funding from the Air Force Medical Service's Other Education and Training program element to the Department of the Air Force to correctly align resources for positions that Air Force Medical Services previously transferred in FY 2020.		
2) Army Medical Command Medical Headquarters Transfer to the Department of the Army:	-2,153	
Transfers sixteen (16) FTEs and associated funding from the Army Medical Command's Other Education and Training program element to the Department of the Army to accurately reflect the transfer of assets to the Department of the Army, in compliance with Military Health System reform initiatives.		
3) Defense Wide Review (DWR) - Medical Readiness Transfer to the Military Departments:	-483,010	
In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, the Defense Health Program transfers the Service's Medical Readiness activities which occur outside of the Military Treatment Facilities to the Military Departments. This transfer allows the medical force structure to meet the operational requirements in support of the National Defense Strategy and support the Congressionally-mandated reforms to the Military Health System. The following Education and Training Medical Readiness programs have been identified as		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
functions that would be more effectively and efficiently run by the Military Departments: (a) The Health Professions Scholarship Program (-$273,414K): The Health Professions Scholarship Programs (HPSP) resources the HPSP scholarships, the Financial Assistance Program (FAP), the Active Duty Health Provider Loan Repayment Program (ADHPLRP), and other pre-commissioning professional scholarship programs. The HPSP funds the military-wide initiative designed to provide financial assistance to students who are physically and academically qualified to become military officers and are interested in attaining one of several types of health-related degrees, or funds the repayment of loans from attaining critically manned health-related degrees. By Service HPSP funds are realigned from Army Medicine (-$104,594K), Air Force Medical Service (-$90,811K) and Navy Bureau of Medicine and Surgery (-$78,009) (b) Army Medicine's medical education missions at the Medical Center of Excellence (Med COE) (-$125,123K; -498 Civilian Fulltime Equivalents): The Med COE is Army's primary medical training center and school providing specialized skills training, graduate and post-graduate education, and professional development education programs for Officers,		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**

Enlisted Soldiers, and Army civilian health care personnel.

(c) Air Force Medical Services' medical education missions at the Medical Education and Training Center (METC) (-$49,181K; -77 Civilian Full Time Equivalents): The tri-Service medical training campus trains enlisted medics, corpsmen, and technicians. Provides oversight of training courses, funding of courses, transportation and equipment associated with schoolhouse operations. Also provides Expeditionary Skills, Exercises and non GME Training - Program management and delivery of training necessary to align expeditionary skills with the combatant commander's warfighter requirements.

(d) Navy Bureau of Medicine and Surgery's Graduate Medical Education missions and the Surgeon General Readiness Mission Initiatives (-$35,292K; -113 Civilian Fulltime Equivalents). Graduate Medical Education missions provide the resources required for the specialized skills, training, and professional development education programs for health care personnel at Navy Medical Forces Support Command (NMFSC), Naval Medicine Operational Training Center (NMOTC), and the Navy Medicine Professional Development Center (NMPDC). This also includes educational programs for health care personnel at

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
federal and private sector academic institutions and medical facilities. The Navy Medicine Surgeon General's Readiness Mission initiatives include: (1)Navy Corpsman (HM) Trauma Training (HMTT) - The HMTT Course initiative focuses on the development of Knowledge, Skills, and Abilities (KSA) efforts in the sustainment of clinical readiness skill sets for the entire expeditionary combat casualty care team and supporting specialties. (2) HM Corpsman Training - This program supports the working group from the Deputy Under Secretary of the Navy in FY 2019 and continues to mirror the efforts of Navy Divers (ND), Special Operators (SO/SEALs), Explosive Ordnance Disposal (EOD) and Air Crewman (AW). Navy Corpsman serve alongside other Sailors and Marines who operate in the Naval Special Warfare and Special Operations environment. (3) Role 2 Light Maneuver (R2LM) - R2LM requires training for nine (9), seven-member teams annually in order to support disaggregated/distributed surface combatant operations, ashore or afloat, in support of amphibious and special operations.		
8. Program Increases		49,234
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
c. Program Growth in FY 2021		
1) a. Army Medicine Training Requirements: Provides incremental funding in the Other Education and Training program element for medical readiness	23,316	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	Amount	Totals
training courses at the Army's Medical Center of Excellence in accordance with the National Defense Authorization Act of FY 2017. Funds: (1) the Expeditionary Combat Medic Course which provides training to manage casualties at the point of injury to improve survivability and reduce morbidity rates; (2) the Tactical Combat Medical Care Course which provides levels I and II trauma training (initial care and initial resuscitation), and (3) the Joint Forces Combat Trauma Management Course that provides training for acute war related wounds seen by Combat Support Hospitals (Level III) emergency departments, surgical specialty teams and surgical support staff. Army Medicine Other Education and Training funds for medical readiness training functions will transfer in FY 2021 to the Departments of the Army in accordance with the Defense Wide Review actions to transfer medical readiness functions outside of medical treatment facilities to the respective military departments. Army Medicine's FY 2020 Other Education and Training program element baseline funding is $112,871K.		
2) b. Education and Training Sustainment: Provides supplies and materials, and equipment funds for sustained education and training operations at medical treatment facilities and support commands throughout the Military Health System. Funds are vital for continued success of education and training programs during a period of transition; and	13,854	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
are necessary due to budget reductions outpacing desired efficiencies, reducing the ability to sustain current levels of education and training operations. Funds enhance curricular support of simulation training, advanced medical professional skill development and Knowledge, Skills, and Abilities (KSA) for medical and surgical readiness skill sets for physicians, advanced practice nurses and medical residents. Also provides training materials, consumables, medical supplies, and high-quality manikins and training devices used in the Military Health System's Modeling and Simulation Training Programs and associated high-fidelity simulation medical training programs such as the HM Trauma Training, Tactical Combat Casualty Course, Role 2 Light Maneuver, and the Expeditionary Medical Unit (EMU). By component, funds are increased at the Defense Health Agency (+$4,610K), Army Medical Command (+$3,602K), Navy Bureau of Medicine and Surgery (+$3,509K), the Uniformed Services University of the Health Sciences (+$1,146K) the National Capital Region-Medical Directorate (+$495K), and Air Force Medical Services (+$492K). FY 2020 Education and Training baseline funding is $750,860K. The FY 2020 Education and Training civilian staffing is 1,756 FTEs, and the FY 2020 Education and Training contractor staffing 384 CMEs.		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
3) c. Navy Medicine Training: Continues the Defense Health Agency's focus on force health readiness through integrated education and training to strengthen our Ready Medical Forces. Provides funding for Hospital Corpsman Strength and Conditioning Training, Hospital Trauma Training, and Role 2 Light Maneuver Training. Hospital Corpsman Strength and Conditioning Training requirements are necessary to operate with Naval Special Warfare, Marine Special Operations Command, Navy Expeditionary Combat Command, Naval Aviation and the Fleet Marine Force units. The objective is training Hospital Corpsmen to mirror the efforts of Navy Divers (ND), Special Operators (SO/SEALs), Explosive Ordnance Disposal (EOD) and Air Crewman (AW). Navy Corpsman serve alongside other Sailors and Marines who operate in the Naval Special Warfare and Special Operations environment. Hospital Trauma Training provides hospital corpsmen with training opportunities at civilian trauma centers to gain experience treating critically ill or injured patients who are not routinely seen in the Medical Treatment Facilities. The intent is to develop the Knowledge, Skills, and Abilities (KSA) for clinical readiness skill sets for the entire expeditionary combat casualty care team and supporting specialties. The Role 2 Light Maneuver Training provides annual training for nine (9), seven-member teams to support disaggregated/distributed surface	6,544	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
combatant operations, ashore or afloat, in support of amphibious and special operations. Funds increase the Other Education and Training program element. Navy Medicine's FY 2020 Other Education and Training program element baseline funding is $46,610K.		
4) d. Army Medicine Medical Simulation: Provides funds in Army Medicine's Other Education and Training program element for the Medical Simulation program. The Medical Simulation program provides training opportunities for Army Medical Department health professionals of all skill levels, allowing providers to train on unique and specialized procedures with increased sets and repetitions that are not available at their assigned Military Treatment Facility (MTF) and adds complexity to routine cases by including additional environmental or training factors that are not available at the Military Treatment Facility. The Medical Simulation program facilitates the use of Individual Critical Task Lists (ICTLs), which are vital to maintaining a Ready Medical Force. Funding will enable the training of 100% of the ICTL tasks that allow simulation substitution for all health professionals of all skill levels and will increase operations to 100% capacity. Current simulation inventory is insufficient to meet the demand for simulations once the ICTLs are fully developed and	5,520	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
implemented. Currently, simulation facilities train an estimated 30% of projected ICTL tasks requirements. Army Medicine's FY 2020 Other Education and Training program element baseline funding is $112,871K. Army Medicine's FY 2020 Other Education and Training civilian staffing is 605FTEs, and the Other Education and Training contractor staffing is 113 CMEs.		
9. Program Decreases		-12,888
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
c. Program Decreases in FY 2021		
1) a. Defense Wide Review (DWR) - Uniformed Services University of the Health Sciences Program Reduction: In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, reduce the Uniformed Services University of the Health Sciences program element funds for the following programs: (a) Eliminate Tri-Service Nursing Research Program (-$6,500K): The Tri-Service Nursing Research Program mission is to facilitate nursing research to optimize the health of military members and their beneficiaries, develop and strengthen the Tri-Service community of nurse scholars to generate new knowledge in military nursing and translate it into practice, and provide a Tri-Service infrastructure to enhance military nursing research and advance evidence-based practice.	-10,000	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
(b) Reduce Center for Deployment Psychology (-$1,250K): The Center for Deployment Psychology (CDP) trains military and civilian behavioral health professionals to provide high-quality, evidence-based behavioral health services to military personnel, veterans and their families. To date, there have been over 2.2 million deployments in support of the global war on terrorism and overseas contingency operations.		
(c) Eliminate Defense Medical Ethics Center (-$1,000K): The mission of the Department of Defense Medical Ethics Center (DMEC) is to serve as the national and international lead in military medical ethics for all health care providers in the Military Health System (MHS)/DoD. USU will continue to include the topic of medical ethics in its student educational programs, military medical leadership and professional development curricula to ensure that USU Students become ethical practitioners and leaders at all levels in the nation's uniformed health services.		
(d) Eliminate National Center for Disaster Medicine and Public Health (-$1,000K):The National Center for Disaster Medicine and Public Health is the Nation's academic center of excellence leading domestic and international disaster health education and research efforts.		
(e) Eliminate Interagency Institute for Federal Healthcare Executives (-$250K): The purpose of the		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
Institute is to provide an opportunity for practicing federal health care executive to examine some of the current issues in health care policy and management and to explore their potential impact on the federal health care system. The FY 2020 Uniformed Services University of the Health Sciences baseline funding is $169,793K. The FY 2020 Education and Training baseline contracting is 99 CMEs.		
2) b. Reduced Resource Requirements: Reduction of (-$2,170K) based on the incorporation of updated budgetary projections and better pricing methodologies following in-depth analysis of the education and training requirement, resulting in improved requirements identification and resource management. Funds are reduced from the Other Education and Training program element. The FY 2020 Other Education and Training baseline funding is $316,384K. The FY 2020 Education and Training baseline contracting is 285 CMEs.	-2,170	
3) c. One Less Compensable Day: In accordance with OMB Circular A-11, Section 85.5C, reduces civilian pay to account for one fewer paid day in FY 2021 (261 paid days) than in FY 2020 (262 paid days). The FY 2020 Education and Training civilian compensation baseline funding is $188,132K.	-718	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
The FY 2020 baseline civilian staffing is 1,756 FTEs.		
FY 2021 Budget Request		**315,691**

IV. Performance Criteria and Evaluation Summary:

(Student/Trainee Count)

	FY 2019 Actuals	FY 2020 Estimate	FY 2021 Estimate	Change FY 2019/2020	Change FY 2020/2021
Officer Acquisition[1]	5,620	5,851	697	231	-5,154
Graduate Medical Education (GME)[2]	5,545	5,547	4,105	2	-1,442
Medical Education and Training Campus (METC)[3]	6,498	6,899	7,255	401	356
Other Training[4]	5,387	5,634	40	247	-5,594

1. Officer Acquisition programs include Health Professions Scholarship Program, Financial Assistance Program, Active Duty Health Professions Loan Repayment Program, and Nurse Candidate Program. Values represent student load for a year. Decrease in FY 2021 reflect the Service's Medical Readiness activities which occur outside of the Military Treatment Facilities transfer to the Military Departments.

2. Graduate Medical Education includes initial and advanced skills training programs, and leadership programs for officer and enlisted personnel. Values represent student load for a year. Navy Medicine will tansfer the GME program to the Department of the Navy in FY 2021.

3. Medical Education and Training Campus (METC) include training programs such as Public Health, Nuclear Medicine, Medical Laboratory Technicians, Surgery Technicians, Preventive Medicine, Pharmacy Technicians, Dental Assistants, and Combat Medic. Values represent student load as program lengths vary.

4. Other Training includes leadership and skills progression courses as well as professional development training. Values represent student load for a year. Decrease in FY 2021 reflect the Service's Medical Readiness activities which occur outside of the Military Treatment Facilities transfer to the Military Departments.

IV. Performance Criteria and Evaluation Summary:

Refer to the Personnel Summary in Section V.

Defense Health Program
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V. Personnel Summary	FY 2019	FY 2020	FY 2021	Change FY 2019/ FY 2020	Change FY 2020/ FY 2021
Active Military End Strength (E/S) (Total)	14,852	14,849	14,782	-3	-67
Officer	7,495	7,444	7,416	-51	-28
Enlisted	7,357	7,405	7,366	48	-39
Active Military Average Strength (A/S) (Total)	13,989	14,851	14,816	862	-35
Officer	6,767	7,470	7,430	703	-40
Enlisted	7,222	7,381	7,386	159	5
Civilian FTEs (Total)	2,013	1,756	1,125	-257	-631
U.S. Direct Hire	1,967	1,747	1,116	-220	-631
Foreign National Direct Hire	2	1	1	-1	0
Total Direct Hire	1,969	1,748	1,117	-221	-631
Foreign National Indirect Hire	1	1	1	0	0
Reimbursable Civilians	43	7	7	-36	0
Average Annual Civilian Salary ($ in thousands)	108.3	107.6	127.9	-0.7	20.3
Contractor FTEs (Total)	678	384	293	-294	-91

Explanation of changes in Active Military End Strength: The decrease from FY 2019 to FY 2020 (-3) includes internal reprogramming to Education and Training from Base Operations to meet emerging requirements (Navy: +267), restoral of previously programmed reductions at Army Major Headquarters Activities (Army: +5), 10% end strength reduction for Major Headquarters Activities (Navy: -11), mission transfers to the Military Departments for Medical Readiness Programs (-21: Army: -10, Navy: -8, AF: - 3), and FY 2019 End Strength

Execution adjustments (-243). The decrease from FY 2020 to FY 2021 (-67) includes internal reprogramming to meet emerging requirements (Navy: +1), transfers to the military departments for Medical Headquarters activities (Army: -2), mission transfers to the Military Departments for Medical Readiness Programs (-34: Navy: -24, Army: -10), and the phased drawdown of transfers to the military departments for medical military End Strength reductions (Army: -32) to comply with Section 719 of the FY 2020 National Defense Authorization Act (NDAA) that limits the realignment or reduction of military medical E/S authorizations and to reflect executable Service plans for the drawdown.

Explanation of changes in Civilian FTEs: The net decrease from FY 2019 to FY 2020 (-257) reflects an increase of 7 FTEs at Army Medical Command for Medical Readiness Activities; an increase of 5 FTEs for the DoD Medical Ethics Center; a decrease for the transfer FTEs from the Navy Bureau of Medicine and Surgery to the Department of the Navy (-11); transfer of one FTE from the Navy Bureau of Medicine and Surgery to the Defense Health Agency Management Activities Budget Activity Group (-1); 10% reduction for Major Headquarters Activities at Navy Bureau of Medicine and Surgery (-5); and execution adjustments based on FY 2019 actuals at the Defense Health Agency (+26), National Capital region (-9), Navy Bureau of Medicine and Surgery (-15), Air Forces Medical Services (-35), Army Medical Command (-74), and the Uniformed Services University of the Health Sciences (USUHS) (-145). The net decrease from FY 2020 to FY 2021(-631) reflects an increase in FTEs at the USUHS (+66) to match actual execution resulting from programmatic growth requiring additional FTEs; execution adjustments at Army Medical Command (+3), Air Forces Medical Services (+3), and USUHS (+1); realignment of FTEs from the Defense Health Agency (-2) to USUHS (+2) for the Medical Education Training Command, College of Applied Health Sciences; Army Medical Command's transfer of FTEs to the Department of the Army (-16); and the transfer of education and training FTEs, following the Defense Wide Review, to the Department of the Army (-498), the Department of the Navy (-113), and the Department of the Air Force (-77).

Explanation of changes in Contractor FTEs: The decrease from FY 2019 to FY 2020 (-294) reflects the net impact of changes in contractor execution in other services from non-federal sources (+26) due to migration of contractor CMEs from grants/corporative agreements to contractor base, and FY 2020 decreased programmed funding for advisory and assistant services contracts (-288), medical care contracts (-23), and other costs (medical care) (-9). The decrease from FY 2020 to FY 2021 (-91) reflects decreases to other services from non-federal sources (-57), medical care contracts (-26), and other costs (medical care) (-8) associated with Army Medicine's transfer of the Health Readiness Center of Excellence to the Department of the Army, Air Force Medical Services and Navy Bureau of Medicine and Surgery's transfer of education and training contract dollars to their respective Service departments, and reduction of contractor CMEs at the Air Force's Human Performance Wing following efficiencies studies.

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VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	210,055	5,840	-31,239	184,656	2,844	-47,997	139,503
103 Wage Board	3,264	91	78	3,433	53	-83	3,403
104 FN Direct Hire (FNDH)	78	2	-40	40	1	0	41
199 TOTAL CIV COMPENSATION	**213,397**	**5,933**	**-31,201**	**188,129**	**2,898**	**-48,080**	**142,947**
308 Travel of Persons	71,553	1,431	3,057	76,041	1,521	-56,038	21,524
399 TOTAL TRAVEL	**71,553**	**1,431**	**3,057**	**76,041**	**1,521**	**-56,038**	**21,524**
401 DLA Energy (Fuel Products)	47	0	211	258	-13	-223	22
411 Army Supply	79	0	-67	12	0	-12	0
412 Navy Managed Supply, Matl	1,359	28	60	1,447	58	-229	1,276
414 Air Force Consol Sust AG (Supply)	3	0	0	3	0	0	3
416 GSA Supplies & Materials	1,654	33	-380	1,307	26	-309	1,024
417 Local Purch Supplies & Mat	356	7	60	423	8	1	432
422 DLA Mat Supply Chain (Medical)	111	0	-82	29	0	1	30
499 TOTAL SUPPLIES & MATERIALS	**3,609**	**68**	**-198**	**3,479**	**79**	**-771**	**2,787**
503 Navy Fund Equipment	289	6	357	652	26	-213	465
506 DLA Mat Supply Chain (Const & Equip)	0	0	439	439	0	9	448
507 GSA Managed Equipment	0	0	526	526	11	-1	536
599 TOTAL EQUIPMENT PURCHASES	**289**	**6**	**1,322**	**1,617**	**37**	**-205**	**1,449**
614 Space & Naval Warfare Center	479	8	345	832	52	-35	849
671 DISA DISN Subscription Services (DSS)	26	-2	36	60	3	-2	61
677 DISA Telecomm Svcs - Reimbursable	116	2	-118	0	0	0	0
699 TOTAL DWCF PURCHASES	**621**	**8**	**263**	**892**	**55**	**-37**	**910**
707 AMC Training	1,253	243	-1,496	0	0	0	0
771 Commercial Transport	573	11	272	856	17	-411	462
799 TOTAL TRANSPORTATION	**1,826**	**254**	**-1,224**	**856**	**17**	**-411**	**462**

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
901 Foreign National Indirect Hire (FNIH)	3	0	0	3	0	0	3
912 Rental Payments to GSA (SLUC)	140	3	-143	0	0	0	0
914 Purchased Communications (Non-Fund)	245	5	55	305	6	-9	302
915 Rents (Non-GSA)	450	9	677	1,136	23	-432	727
917 Postal Services (U.S.P.S)	87	2	-72	17	0	0	17
920 Supplies & Materials (Non-Fund)	37,507	750	-4,969	33,288	666	-5,502	28,452
921 Printing & Reproduction	772	15	1,242	2,029	41	-1,191	879
922 Equipment Maintenance By Contract	3,459	69	2,040	5,568	111	-4,292	1,387
923 Facilities Sust, Rest, & Mod by Contract	1,702	34	-1,474	262	5	-267	0
924 Pharmaceutical Drugs	141	5	-146	0	0	0	0
925 Equipment Purchases (Non-Fund)	11,502	230	3,016	14,748	295	9,450	24,493
927 Air Def Contracts & Space Support (AF)	2,646	53	-2,699	0	0	0	0
930 Other Depot Maintenance (Non-Fund)	229	5	-234	0	0	0	0
932 Mgt Prof Support Svcs	8,831	177	-6,200	2,808	56	-1,366	1,498
933 Studies, Analysis & Eval	800	16	-816	0	0	0	0
934 Engineering & Tech Svcs	517	10	-527	0	0	0	0
936 Training and Leadership Development (Other Contracts)	1,986	40	-2,026	0	0	0	0
955 Other Costs (Medical Care)	261,883	9,166	-6,366	264,683	9,264	-273,414	533
964 Other Costs (Subsistence and Support of Persons)	3,100	62	-2,469	693	14	-175	532
984 Equipment Contracts	3,713	74	-3,787	0	0	0	0
986 Medical Care Contracts	8,841	345	-6,085	3,101	121	-835	2,387
987 Other Intra-Govt Purch	8,037	161	8,866	17,064	341	-1,077	16,328
988 Grants	25,897	518	18,820	45,235	905	-18,571	27,569
989 Other Services	67,781	1,356	15,143	84,280	1,686	-47,744	38,222

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OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
990 IT Contract Support Services	4,065	81	-1,071	3,075	62	-854	2,283
999 TOTAL OTHER PURCHASES	**454,334**	**13,186**	**10,775**	**478,295**	**13,596**	**-346,279**	**145,612**
Total	**745,629**	**20,886**	**-17,206**	**749,309**	**18,203**	**-451,821**	**315,691**

The following are Education and Training Budget Activity Group internal OP32 realignments within the same program element:
(a) Uniformed Services University of the Health Sciences (USUHS)CIVPERS FTE Rebalancing: Realigns CIVPAY funding ($9,557K) within the Other Education and Training program element, from OP32 Line 988, Grants to OP32 line 101, Executive, General and Specialty Schedules to account for budgeting and execution of an additional 66 FTEs at USUHS. The additional FTEs are given to match actual execution resulting from programmatic growth requiring additional FTEs to manage the following programs: Murtha Cancer Center; Center for Deployment Psychology; Center for the Study of Traumatic Stress; Doctor of Nursing Practice; Human Performance Resource Center; Simulation Center Educational Certificate Program; Graduate Medical Education for Faculty Development; Enlisted to Medical Degree; National Center for Disaster Medicine and Public Health; Center for Global Health Engagement; Medical Education and Training Campus Affiliation for Undergraduate Degrees; General Surgery Maintenance of Expeditionary Currency; Inter-Agency Executive Medicine Institute Class; and Supplement Safety.

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Defense Health Program
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Operation and Maintenance
Base Operations/Communications

I. Description of Operations Financed: Base Operations (BASOPS)/Communications refers to the resources for activities associated with all aspects of operating and maintaining facilities within the Military Health System (MHS). BASOPS provides for basic municipal services to operate our facilities, services for pest control, custodial, refuse collection, landscaping, security, internal and external communications, administrative services and routine repair, maintenance or modernization activities at locations world-wide supporting the Armed Forces. The program consists of eight program elements:

Facility Restoration and Modernization - Resources required for facilities' restoration and modernization projects including repair and replacement due to excessive age, natural disaster, fire, accident, or other causes. Modernization includes alteration of facilities solely to implement new or higher standards (including regulatory changes), to accommodate new functions, or to replace building components that typically last more than 30 years (such as foundations and framework). Recapitalization of facilities, which extends the service life of a facility, is accomplished by either restoration, modernization or replacement of the facility keeping infrastructure inventory relevant to delivery of healthcare advances and enhance operational or business effectiveness within a revitalized structure. The Operations & Maintenance portion of recapitalization is restoration or modernization activities.

Facility Sustainment - Resources required for maintenance and repair activities necessary to keep facilities in good working order. It includes regularly scheduled adjustments and inspections, preventive maintenance tasks, emergency response and service calls for minor repairs. Sustainment also includes major repairs or replacement of facility components (usually accomplished by contract) that are expected to occur periodically throughout the life cycle of facilities. This work includes regular roof replacement, refinishing of wall surfaces, repairing and replacement of heating and cooling systems, and replacing tile and carpeting.

I. Description of Operations Financed (cont.)

Facilities Operations- Resources required for fire prevention and protection including crash rescue, emergency response, and disaster preparedness, engineering readiness, utilities to include plant operation and purchase of heat, light and power, electricity, water, natural gas, other utility services, refuse collection and disposal to include recycling operations, pavement clearance including snow and ice removal from roads, lease costs for real property including off-base facilities, grounds maintenance and landscaping, real property management and engineering services including special inspections of facilities and master planning, pest control, and custodial services.

Base Communications - Resources required to provide base communication voice or data and wireless services to Military Health System medical activities. This includes non-tactical, non-DCS (Defense Communications System), base communication facilities and equipment systems that provide local voice, data or wireless communications worldwide. Services such as telephone service, telegraph service, marine cable service, postage and box rentals, contractual mail service including express letter delivery, or messenger service. Includes all rental payments for equipment to accomplish communication services. (excludes parcel post and express mail services for freight and IT or telecom hardware, software and related training)

Base Operations Support - Resources required to provide comptroller services, data processing services, information activities, legal activities, civilian personnel administration, military personnel administration, printing and reproduction, facility safety, management analysis/engineering services, retail supply operations, supply activities, procurement operations, storage activities, transportation activities, physical security and police activities, non-aseptic laundry and dry cleaning, food services, and morale, welfare and recreation activities.

I. Description of Operations Financed (cont.)

Environmental Compliance & Pollution Prevention - Resources required to comply with environmental laws, regulations, criteria, and any action that is designed to reduce or eliminate (rather than control or treat) the future impact that an operation may have on the environment (including impacts to the air, surface and ground waters, vegetation and soils) through the source reduction of pollutants, more efficient use of natural resources, recycling, and/or reduced emissions of toxic and other undesirable materials or wastes to the environment. This includes manpower, training, travel, and supplies.

Visual Information Systems - Resources required to provide manpower, travel, contractual service, procurement of supplies and materials, expense equipment, necessary facilities and the associated services specifically identifiable to visual information productions, services, and support.

Demolition/Disposal of Excess Facilities - Resources required for demolition and/or disposal costs associated with excess facilities, including buildings or any other permanent or temporary structure as well as pavements, utility systems, and other supporting infrastructure. Includes environmental costs directly attributable to demolition/disposal to include inspection and removal of hazardous material (such as lead-based paint or asbestos).

II. Force Structure Summary:

The Base Operations and Communications Budget Activity Group (BAG) includes staffing and contracts to provide base operations support services to the Military Health System facilities, planning and oversight of medical infrastructure, and facility systems maintenance to include life support systems. Infrastructure alterations are necessary to keep up with modern medical practices, promote efficiencies and recapitalize facility inventory to accomplish the medical healthcare mission. This BAG primarily awards

II. Force Structure Summary (cont.)

contracts to achieve these specialized infrastructure changes. In addition to infrastructure and system operations, this BAG also includes essential base support activities such as environmental waste removal, non-medical custodial service, grounds and surface maintenance including mowing, landscaping, road maintenance and snow removal, security and guard service and base communication systems. Many of the activities and services received consist of cost effective contracts to assure timely repair and service availability to sustain continuous services within the medical facility. The funds in this BAG enable the DHP medical facilities to comply with The Joint Commission standards for accreditation and certification of health care organizations.

NOTE: Distribution of funds between CONUS and OCONUS follows the Financial Management Regulation (FMR) definition of CONUS and OCONUS. DoD 7000.14.R "Contiguous United States [CONUS] is the 48 states of the United States and the District of Columbia, which do not include Alaska and Hawaii." See 37 United States Code (U.S.C.) §101." Non-Foreign OCONUS Area is the states of Alaska and Hawaii, the Commonwealths of Puerto Rico and the Northern Mariana Islands; Guam; the U.S. Virgin Islands, and U.S. territories, and possessions (excluding the former Trust Territories of the Pacific Islands, which are foreign areas for Joint Travel Regulations purposes).

Defense Health Program
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Base Operations/Communications

III. Financial Summary ($ in thousands)

		FY 2020					
			Congressional Action				
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
1. Facility Restoration/Modernization - CONUS	241,609	357,420	0	0.0	357,420	357,420	296,316
2. Facility Restoration/Modernization - OCONUS	18,248	107,422	0	0.0	107,422	107,422	94,665
3. Facility Sustainment - CONUS	513,930	502,992	0	0.0	502,992	503,072	450,046
4. Facility Sustainment - OCONUS	122,807	138,590	0	0.0	138,590	138,730	140,059
5. Facilities Operations - Health Care (CONUS)	469,741	514,081	-9,000	-1.8	505,081	501,220	461,935
6. Facilities Operations - Health Care (OCONUS)	54,709	54,025	0	0.0	54,025	54,463	55,117
7. Base Communications - CONUS	50,402	51,381	0	0.0	51,381	51,364	49,609
8. Base Communications - OCONUS	4,228	4,283	0	0.0	4,283	4,343	3,403
9. Base Operations - CONUS	341,718	302,903	7,000	2.3	309,903	317,559	318,907
10. Base Operations - OCONUS	22,866	29,058	0	0.0	29,058	21,064	23,276
11. Pollution Prevention	504	286	0	0.0	286	286	292
12. Environmental Compliance	22,479	24,029	0	0.0	24,029	25,179	19,647
13. Visual Information Systems	6,507	6,819	0	0.0	6,819	9,070	9,333
14. Demolition	0	0	0	n/a	0	0	0

Defense Health Program
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Operation and Maintenance
Base Operations/Communications

III. Financial Summary ($ in thousands)

		FY 2020				
			Congressional Action			
A. BA Subactivities	FY 2019 Actuals	Budget Request	Amount	Percent	Appropriated	Current Estimate	FY 2021 Estimate
Total	1,869,748	2,093,289	-2,000	-0.1	2,091,289	2,091,192	1,922,605

NOTE: Resources programmed for Facilities Restoration or Modernization (RM) activities is planned for failing systems or infrastructure repairs due to lack of sustainment, excessive age, and emergency repairs. It also funds modernization efforts that propel the MHS toward compliance with new and current medical advancements for function within the medical facilities to include changing regulatory standards. The RM funding is an easy area for re-purposing funding toward emergent year of execution unplanned thus unfunded costs to accomplish the MHS medical mission. Persistent re-purposing of RM funding in year of execution encroaches on the ability of the DHP to mitigate failing facility systems and infrastructure repairs that only maintains the current function at status quo. Decreases to these funds also prevents planned modernization efforts that have allowed the MHS medical facilities to obtain status of a world class healthcare system servicing the Military Service Members and their families.

(a) FY 2019 Actuals reflects reprogramming of $249,371K from the Restoration/Modernization of Facilities program to mitigate increasing healthcare costs in Private Sector Care and MHS IM/IT costs associated with Desktop to Data Center and Med-COI high priority system requirements

(b) FY 2020 reflects $10,000K funding for Fisher House as provided in Section 8068 of Appropriation Law.

(c) FY 2021 Restoration/Modernization program reflects $31,300K increase funding from Natural Disaster Recovery.

III. Financial Summary ($ in thousands)

B. Reconciliation Summary	Change FY 2020/FY 2020	Change FY 2020/FY 2021
Baseline Funding	**2,093,289**	**2,091,192**
Congressional Adjustments (Distributed)	-12,000	
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)	10,000	
Subtotal Appropriated Amount	**2,091,289**	
Fact-of-Life Changes (2020 to 2020 Only)	-97	
Subtotal Baseline Funding	**2,091,192**	
Supplemental		
Reprogrammings		
Price Changes		40,701
Functional Transfers		-203,388
Program Changes		-5,900
Current Estimate	**2,091,192**	**1,922,605**
Less: Wartime Supplemental		
Normalized Current Estimate	**2,091,192**	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 President's Budget Request (Amended, if applicable)		**2,093,289**
1. Congressional Adjustments		-2,000
a. Distributed Adjustments		
1) Insufficient Justification	-7,000	
2) Other Costs Excess Growth	-5,000	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
1) Section 8068 : Provision for Fisher House funding	10,000	
FY 2020 Appropriated Amount		**2,091,289**
2. OCO and Other Supplemental Enacted		
3. Fact-of-Life Changes		-97
a. Functional Transfers		
b. Technical Adjustments		
1) Increases		
2) Decreases		
a) FY 2020 Adjustments for Civilian Pay Raise and Subsequent Revisions Impacting BAG 7	-97	
FY 2020 Baseline Funding		**2,091,192**
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2020 Estimate		**2,091,192**
5. Less: OCO and Other Supplemental Appropriations and Reprogrammings (Items 2 and 4)		
FY 2020 Normalized Current Estimate		**2,091,192**
6. Price Change		40,701
7. Functional Transfers		-203,388
a. Transfers In		

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
b. Transfers Out		
1) Defense Wide Review (DWR) - Medical Readiness Transfer to the Military Departments: In accordance with the FY 2021 Secretary of Defense Memo, Department of Defense Reform Focus in 2020, the Defense Health Program has transferred the Service Medical Readiness activities which occur outside of the Military Treatment Facility to the Military Departments. This transfer allows the medical force structure to meet the operational requirements in support of the National Defense Strategy and support the Congressionally-mandated reforms to the Military Health System. The following Medical Readiness programs have been identified as functions that would be more effectively and efficiently run by the Military Departments and support development of a Ready Medical Force and will not have an adverse impact to the delivery of healthcare in the Military Treatment Facilities. Transfer funding for Readiness Mission to MILDEP Army ($100,758K), Navy ($102,229K, -167 civilian FTEs), and Air Force ($401K; -18 civilian FTEs) reducing Defense Health Program Facilities and Base Operations budget.	-203,388	
8. Program Increases		63,345
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
1) Funding for Natural Disaster Recovery Restore Damages to Medical Facilities.	31,300	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
c. Program Growth in FY 2021		
1) a. Increase to the Base Operations Program Element for Single Accounting System Investment Costs: Increased operational requirements for single accounting system phased implementation within the Military Health System (MHS). Operational costs will support requirements including but not limited to, program management, system enhancements, routine licensing and IT Support costs. The FY 2020 Base Operations baseline funding is $328,961K (excludes Fisher House $10.0M funds).	15,169	
2) b. Increase to Base Operations Program Element for Audit Readiness Support: Increase funding to improve oversight of resources and effectiveness of audit readiness program. The FY 2020 Base Operations baseline funding is $328,961K.	7,161	
3) c. Increases Base Operations Program Element for DFAS Transaction Fees: Increases resources for Base Operations for requirements related to additional DFAS transactions processed as new accounting system GFEBS rolls out to additional sites. The FY 2020 Base Operations baseline funding is $328,961K.	5,000	
4) d. Increase to Base Communications Program Element: Increases resources forto planned life cycle equipment investments for telephone and wireless communication upgrades across the MHS enterprise. The	3,369	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
FY 2020 Base Communications baseline funding is $55,664K.		
5) e. Increase Resources for Performance Awards to Civilian Employees: Increases resources available for Civilian Performance Awards during the fiscal year. The FY 2020 Civilian Baseline funding is $214,289K.	1,346	
9. Program Decreases		-69,245
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
1) Reverses One-time Increase from Section 8068 for Fisher House funding.	-10,000	
c. Program Decreases in FY 2021		
1) a. Reduction to Resources in Restoration and Modernization Program Element: Decrease to facilities restoration and modernization funding places investment focus on patient care facilities; reducing project change orders through improving upfront planning of facility projects and seek opportunities to reduce overall footprint with no impact to beneficiary utilization at MHS healthcare facilities. The FY 2020 RM baseline funding is $464,842K.	-29,505	
2) b. Reduces Requirements in Facilities Operations Program Element: Reduces requirements resulting from previous investments for metering of utility services for monthly usage billings and reduces rental costs for	-12,944	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
discontinued occupancy in leased spaces. The FY 2020 Facilities Operations baseline funding is $555,683K.		
3) c. Reduces Requirements to Base Operations Program Element: Realign funding to requirements that utilize RDTE and/or PROC appropriations resulting from reduced professional services required for implementation of single accounting system. The FY 2020 Base Operations baseline funding is $328,961K.	-3,505	
4) d. One Less Compensable Day: In accordance with OMB Circular A-11, Section 85.5 c, reduction in civilian pay to account for one fewer paid days in FY 2021 (261 paid days) than in FY 2020 (262 paid days). The FY 2020 Civilian baseline funding is $ 214,289K.	-824	
5) e. Office of the General Counsel Realigned to the Defense Health Agency Management Activities Program Element: Realigns 24 FTEs and associated resources related to staffing for Office of General Council from National Capital Region (NCR) to Defense Health Agency program element within Management Activities BAG 5. The FY 2020 Base Operations baseline funding is $328,961K.	-2,467	
6) f. Defense Wide Review (DWR) - Reduce Facility Sustainment Funds for non-Clinical Medical Space:	-10,000	

III. Financial Summary ($ in thousands)

C. Reconciliation of Increases and Decreases	**Amount**	**Totals**
Defense Wide Review (DWR) decrease to resources represents programming of facility sustainment activities at 90% for non-clinical medical buildings such as administrative and warehouse locations while medical buildings are programmed at 100% annual sustainment costs projected by the DoD Facilities Sustainment Model (FSM). The FY 2020 Sustainment baseline funding is $641,582K.		
FY 2021 Budget Request		**1,922,605**

IV. Performance Criteria and Evaluation Summary:

	FY 2019	FY 2020	FY 2021	Change FY 2019/2020	Change FY 2020/2021
Facility Sustainment Funding:	636,737	641,802	589,998	5,065	(51,804)
Facility Sustainment Model Requirement:	651,745	664,940	655,877	(6,805)	10,937
Sustainment Rate (MILPERS not included):	98%	100%	90%		

FY 2019 Sustainment MODEL is reflected at 100% while actuals depict less investment in non-medical facilities such as Administrative and Warehouse buildings.
FY 2020 Sustainment MODEL and Programming is reflected at 100%
FY 2021 Sustainment MODEL is reflected at 100% while Programming depicts 90% investment in non-medical facilities such as Administrative and Warehouse buildings which brings the average comparison below 100%.

V. Personnel Summary	FY 2019	FY 2020	FY 2021	Change FY 2019/ FY 2020	Change FY 2020/ FY 2021
Active Military End Strength (E/S) (Total)	2,190	1,537	1,251	-653	-286
Officer	499	378	309	-121	-69
Enlisted	1,691	1,159	942	-532	-217
Active Military Average Strength (A/S) (Total)	2,201	1,864	1,395	-337	-469
Officer	503	439	344	-64	-95
Enlisted	1,698	1,425	1,051	-273	-374
Civilian FTEs (Total)	2,340	2,292	2,082	-48	-210
U.S. Direct Hire	2,050	2,132	1,922	82	-210
Foreign National Direct Hire	71	60	60	-11	0
Total Direct Hire	2,121	2,192	1,982	71	-210
Foreign National Indirect Hire	219	100	100	-119	0
Average Annual Civilian Salary ($ in thousands)	86.1	94.2	95.7	8.1	1.5
Contractor FTEs (Total)	710	462	919	-248	457

Explanation of changes in Active Military End Strength: The decrease from FY 2019 to FY 2020 (-653) includes transfers to the Defense Health Agency for Major Headquarters Activities (Navy: -1), mission transfers to the Military Departments for Medical Readiness Programs (Navy: -30), transfers to the Military Departments for reductions to medical end strength (Army: -1) and internal DHP realignments to meet emerging requirements (Navy BOS -621 to +250 CHS; +104 IM/IT; +267 E&T).

The decrease from FY 2020 to FY 2021 (-286) includes transfers to the military departments for internal realignments and medical readiness programs (Navy: -287) and one transfer back for the revised military drawdown (Army: +1).

Explanation of changes in Civilian FTEs: The decrease from FY 2019 to FY 2020 results from over-execution during the fiscal year 2019. The reduction of civilian FTEs from FY 2021 to FY 2020 is a result of transferring Civilian FTEs out of the DHP to the MILDEP of Navy at -167 and -18 for Air Force. Also part of the decrease from FY 2021 to FY 2020 is -1 FTE for a technical correction and -24 DHP internal movement between Base Ops and Management Activities for Office of General Council staffing.

Explanation of changes to Contractor FTEs: The increase of Contractor FTEs for Base Operations BAG relates to staffing for Facilities Sustainment activities and Facilities Enterprise Division staffing as the DHP mission migrates under DHA from the services medical components.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Base Operations/Communications

VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	175,802	4,887	8,592	189,281	2,915	-20,081	172,115
103 Wage Board	20,364	566	1,597	22,527	347	122	22,996
104 FN Direct Hire (FNDH)	2,941	82	-595	2,428	37	18	2,483
105 Separation Liability (FNDH)	45	1	-1	45	1	-1	45
107 Voluntary Sep Incentives	8	0	0	8	0	0	8
199 TOTAL CIV COMPENSATION	**199,160**	**5,536**	**9,593**	**214,289**	**3,300**	**-19,942**	**197,647**
308 Travel of Persons	17,331	347	-6,658	11,020	220	-166	11,074
399 TOTAL TRAVEL	**17,331**	**347**	**-6,658**	**11,020**	**220**	**-166**	**11,074**
401 DLA Energy (Fuel Products)	2,556	-17	138	2,677	-136	186	2,727
402 Service Fund Fuel	173	-1	-95	77	-4	5	78
412 Navy Managed Supply, Matl	285	6	-107	184	7	-10	181
416 GSA Supplies & Materials	1,028	21	-703	346	7	-66	287
417 Local Purch Supplies & Mat	2,734	55	-915	1,874	37	-33	1,878
422 DLA Mat Supply Chain (Medical)	353	-1	-114	238	0	-2	236
499 TOTAL SUPPLIES & MATERIALS	**7,129**	**63**	**-1,796**	**5,396**	**-89**	**80**	**5,387**
502 Army Fund Equipment	1,587	-1	-1,586	0	0	0	0
503 Navy Fund Equipment	91	2	85	178	7	-14	171
506 DLA Mat Supply Chain (Const & Equip)	14	0	-14	0	0	0	0
507 GSA Managed Equipment	106	2	105	213	4	-12	205
599 TOTAL EQUIPMENT PURCHASES	**1,798**	**3**	**-1,410**	**391**	**11**	**-26**	**376**
611 Navy Surface Warfare Ctr	462	8	-470	0	0	0	0
614 Space & Naval Warfare Center	462	8	-470	0	0	0	0
631 Navy Base Support (NFESC)	1,165	144	278	1,587	28	-302	1,313
633 DLA Document Services	462	2	-464	0	0	0	0
634 NAVFEC (Utilities and Sanitation)	23,377	0	4,992	28,369	567	-604	28,332
635 Navy Base Support (NAVFEC Other Support Services)	23,903	0	27,985	51,888	1,038	324	53,250

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Base Operations/Communications

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
647 DISA Enterprise Computing Centers	0	0	312	312	4	2	318
671 DISA DISN Subscription Services (DSS)	3,731	-322	-365	3,044	146	-1,099	2,091
675 DLA Disposition Services	462	0	-462	0	0	0	0
677 DISA Telecomm Svcs - Reimbursable	251	5	-256	0	0	0	0
679 Cost Reimbursable Purchase	1,189	24	-146	1,067	0	12	1,079
680 Building Maint Fund Purch	0	0	41,688	41,688	0	759	42,447
691 DFAS Financial Operations (Army)	11,659	-274	6,036	17,421	-552	901	17,770
692 DFAS Financial Operations (Navy)	5,922	-115	1,650	7,457	515	-366	7,606
693 DFAS Financial Operations (Air Force)	2,856	-101	480	3,235	559	-494	3,300
696 DFAS Financial Operation (Other Defense Agencies)	7,679	16	-3,045	4,650	1,248	3,750	9,648
699 TOTAL DWCF PURCHASES	**83,580**	**-605**	**77,743**	**160,718**	**3,553**	**2,883**	**167,154**
707 AMC Training	24	5	-29	0	0	0	0
719 SDDC Cargo Ops-Port hndlg	1,259	478	-565	1,172	-316	319	1,175
771 Commercial Transport	2,546	51	-1,094	1,503	30	0	1,533
799 TOTAL TRANSPORTATION	**3,829**	**534**	**-1,688**	**2,675**	**-286**	**319**	**2,708**
901 Foreign National Indirect Hire (FNIH)	2,229	0	-632	1,597	32	4	1,633
912 Rental Payments to GSA (SLUC)	10,141	203	11,022	21,366	427	47	21,840
913 Purchased Utilities (Non-Fund)	245,909	4,918	9,464	260,291	5,206	-37,153	228,344
914 Purchased Communications (Non-Fund)	26,791	536	11,347	38,674	773	-655	38,792
915 Rents (Non-GSA)	62,016	1,240	-35,355	27,901	558	-5,146	23,313
917 Postal Services (U.S.P.S)	3,467	69	-1,381	2,155	43	-52	2,146
920 Supplies & Materials (Non-Fund)	24,883	498	-6,151	19,230	385	-507	19,108
921 Printing & Reproduction	10,110	202	-6,203	4,109	82	-168	4,023

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Base Operations/Communications

OP 32 Line	FY 2019 Actuals	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
922 Equipment Maintenance By Contract	8,079	162	1,777	10,018	200	-1,730	8,488
923 Facilities Sust, Rest, & Mod by Contract	615,462	12,309	-142,309	485,462	9,709	-70,049	425,122
925 Equipment Purchases (Non-Fund)	8,880	178	997	10,055	201	-611	9,645
926 Other Overseas Purchases	3	0	-3	0	0	0	0
930 Other Depot Maintenance (Non-Fund)	740	15	-65	690	14	-346	358
932 Mgt Prof Support Svcs	53,284	1,066	-39,331	15,019	300	-3,911	11,408
933 Studies, Analysis & Eval	8,920	178	-9,098	0	0	0	0
934 Engineering & Tech Svcs	457	9	1,067	1,533	31	-129	1,435
937 Locally Purchased Fuel (Non-Fund)	2,369	-16	-324	2,029	41	-189	1,881
955 Other Costs (Medical Care)	9,789	382	-9,315	856	33	6,266	7,155
957 Other Costs (Land and Structures)	235,917	4,718	226,935	467,570	9,351	-85,549	391,372
959 Other Costs (Insurance Claims/Indmnties)	12	0	-12	0	0	0	0
960 Other Costs (Interest and Dividends)	1,359	27	-1,386	0	0	0	0
964 Other Costs (Subsistence and Support of Persons)	5,211	104	-5,315	0	0	0	0
984 Equipment Contracts	88	2	-90	0	0	0	0
985 Research & Development, Contracts	515	0	-515	0	0	0	0
986 Medical Care Contracts	5,690	222	-3,652	2,260	88	-19	2,329
987 Other Intra-Govt Purch	127,772	2,555	43,362	173,689	3,474	61	177,224
988 Grants	0	0	10,000	10,000	200	-10,200	0
989 Other Services	72,408	1,448	41,562	115,418	2,308	2,438	120,164
990 IT Contract Support Services	14,420	288	12,073	26,781	536	15,162	42,479
999 TOTAL OTHER PURCHASES	**1,556,921**	**31,313**	**108,469**	**1,696,703**	**33,992**	**-192,436**	**1,538,259**
Total	**1,869,748**	**37,191**	**184,253**	**2,091,192**	**40,701**	**-209,288**	**1,922,605**

NOTE: (a) FY 2019 Actuals reflects reprogramming of $249,371K from the Restoration/Modernization of Facilities OP-32 Row 957 to

mitigate increasing healthcare costs in Private Sector Care and MHS IM/IT costs associated with the Desk to Data Center and Med-COI high priority system requirements.
(b) FY 2021 ROW 957 contains additional funding above DHP programmed RM funds of $31,300 from the Natural Disaster Recovery funds specific to FY 2021 Restoration/Modernization program.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Facilities Sustainment, Restoration, and Modernization

VI. OP 32 Line Items as Applicable (Dollars in thousands):

OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
101 Exec, Gen'l & Spec Scheds	15,345	0	427	-3,414	12,358	0	190	-74	12,474
103 Wage Board	9,800	0	272	583	10,655	0	164	25	10,844
104 FN Direct Hire (FNDH)	229	0	6	-235	0	0	0	0	0
105 Separation Liability (FNDH)	26	0	1	-1	26	0	0	0	26
199 TOTAL CIV COMPENSATION	**25,400**	**0**	**706**	**-3,067**	**23,039**	**0**	**354**	**-49**	**23,344**
308 Travel of Persons	169	0	3	165	337	0	7	0	344
399 TOTAL TRAVEL	**169**	**0**	**3**	**165**	**337**	**0**	**7**	**0**	**344**
401 DLA Energy (Fuel Products)	93	0	-1	64	156	0	-8	12	160
402 Service Fund Fuel	5	0	0	-4	1	0	0	0	1
412 Navy Managed Supply, Matl	196	0	4	-124	76	0	3	-1	78
414 Air Force Consol Sust AG (Supply)	1	0	0	-1	0	0	0	0	0
416 GSA Supplies & Materials	280	0	6	-171	115	0	2	0	117
417 Local Purch Supplies & Mat	1,810	0	36	-1,107	739	0	15	0	754
422 DLA Mat Supply Chain (Medical)	237	0	-1	-139	97	0	0	2	99
499 TOTAL SUPPLIES & MATERIALS	**2,622**	**0**	**44**	**-1,482**	**1,184**	**0**	**12**	**13**	**1,209**
502 Army Fund Equipment	1,587	0	-1	-1,586	0	0	0	0	0
503 Navy Fund Equipment	44	0	1	-16	29	0	1	-1	29

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Facilities Sustainment, Restoration, and Modernization

OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
506 DLA Mat Supply Chain (Const & Equip)	14	0	0	-14	0	0	0	0	0
507 GSA Managed Equipment	51	0	1	-16	36	0	1	0	37
599 TOTAL EQUIPMENT PURCHASES	**1,696**	**0**	**1**	**-1,632**	**65**	**0**	**2**	**-1**	**66**
611 Navy Surface Warfare Ctr	462	0	8	-470	0	0	0	0	0
614 Space & Naval Warfare Center	462	0	8	-470	0	0	0	0	0
631 Navy Base Support (NFESC)	797	0	98	11	906	0	16	2	924
633 DLA Document Services	462	0	2	-464	0	0	0	0	0
634 NAVFEC (Utilities and Sanitation)	462	0	0	-462	0	0	0	0	0
635 Navy Base Support (NAVFEC Other Support Services)	14,744	0	0	20,416	35,160	0	703	-215	35,648
671 DISA DISN Subscription Services (DSS)	198	0	-17	-181	0	0	0	0	0
675 DLA Disposition Services	462	0	0	-462	0	0	0	0	0
677 DISA Telecomm Svcs - Reimbursable	198	0	4	-202	0	0	0	0	0
679 Cost Reimbursable Purchase	462	0	9	-471	0	0	0	0	0
692 DFAS Financial Operations (Navy)	462	0	-9	-453	0	0	0	0	0

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Facilities Sustainment, Restoration, and Modernization

OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
699 TOTAL DWCF PURCHASES	**19,171**	**0**	**103**	**16,792**	**36,066**	**0**	**719**	**-213**	**36,572**
719 SDDC Cargo Ops-Port hndlg	462	0	176	-638	0	0	0	0	0
771 Commercial Transport	46	0	1	-38	9	0	0	0	9
799 TOTAL TRANSPORTATION	**508**	**0**	**177**	**-676**	**9**	**0**	**0**	**0**	**9**
901 Foreign National Indirect Hire (FNIH)	249	0	0	-130	119	0	2	1	122
913 Purchased Utilities (Non-Fund)	453	0	9	-462	0	0	0	0	0
914 Purchased Communications (Non-Fund)	231	0	5	-228	8	0	0	0	8
915 Rents (Non-GSA)	1,346	0	27	-1,373	0	0	0	0	0
917 Postal Services (U.S.P.S)	198	0	4	-202	0	0	0	0	0
920 Supplies & Materials (Non-Fund)	12,358	0	247	-6,285	6,320	0	126	-14	6,432
921 Printing & Reproduction	27	0	1	-28	0	0	0	0	0
922 Equipment Maintenance By Contract	1,179	0	24	552	1,755	0	35	-1	1,789
923 Facilities Sust, Rest, & Mod by Contract	537,472	0	10,749	-96,017	452,204	0	9,044	-64,528	396,720
925 Equipment Purchases (Non-Fund)	1,187	0	24	220	1,431	0	29	0	1,460

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Facilities Sustainment, Restoration, and Modernization

OP 32 Line	FY 2019 Actuals	Foreign Currency Rate Diff	Change FY 2019/FY 2020 Price	Change FY 2019/FY 2020 Program	FY 2020 Estimate	Foreign Currency Rate Diff	Change FY 2020/FY 2021 Price	Change FY 2020/FY 2021 Program	FY 2021 Estimate
930 Other Depot Maintenance (Non-Fund)	105	0	2	-107	0	0	0	0	0
932 Mgt Prof Support Svcs	72	0	1	-73	0	0	0	0	0
933 Studies, Analysis & Eval	72	0	1	-73	0	0	0	0	0
937 Locally Purchased Fuel (Non-Fund)	1	0	0	-1	0	0	0	0	0
955 Other Costs (Medical Care)	857	0	33	-890	0	0	0	0	0
957 Other Costs (Land and Structures)	232,634	0	4,653	227,555	464,842	0	9,297	-83,140	390,999
964 Other Costs (Subsistence and Support of Persons)	2	0	0	-2	0	0	0	0	0
985 Research & Development, Contracts	4	0	0	-4	0	0	0	0	0
986 Medical Care Contracts	201	0	8	-209	0	0	0	0	0
987 Other Intra-Govt Purch	44,388	0	888	18,343	63,619	0	1,272	315	65,206
989 Other Services	13,724	0	274	41,648	55,646	0	1,113	-42	56,717
990 IT Contract Support Services	268	0	5	-273	0	0	0	0	0
999 TOTAL OTHER PURCHASES	**847,028**	**0**	**16,955**	**181,961**	**1,045,944**	**0**	**20,918**	**-147,409**	**919,453**
Total	**896,594**	**0**	**17,989**	**192,061**	**1,106,644**	**0**	**22,012**	**-147,659**	**980,997**

NOTE: (a) FY 2019 Estimated Actuals reflects reprogramming of $249,371K from the Restoration/Modernization of Facilities OP-32 Row 957 to mitigate increasing healthcare costs in Private Sector Care and MHS IM/IT costs associated with the Desktop to Data Center and Med-COI high priority system requirements

FY 2021 Restoration/Modernization of Facilities OP-32 row 957 reflects $31,300K funding from Natural Disaster Recovery funding.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Cost of Medical Activities

(Dollars in Tho	DON'T FORGET TO DELETE HIDDEN ROWS	FY 2019 Actual[1]	FY 2020 Request[2]	FY 2021 Request[3]	FY 2019/2020 Change	FY 2019/2020 Percent	FY 2020/2021 Change	FY 2020/2021 Percent
In-House Care								
0807700DHA	Defense Medical Centers, Hospitals and Medical Clinics-CONUS	6,661,247	6,802,022	6,935,666	140,775	2.1%	133,644	2.0%
0807900DHA	Defense Medical Centers, Hospitals and Medical Clinics-OCONUS	458,294	405,687	464,918	-52,607	-11.5%	59,231	14.6%
0807701DHA	Pharmaceuticals-CONUS	1,555,632	1,564,263	1,548,414	8,631	0.6%	-15,849	-1.0%
0807901DHA	Pharmaceuticals-OCONUS	119,485	151,030	153,016	31,545	26.4%	1,986	1.3%
0807715DHA	Dental Care Activities-CONUS	439,496	375,853	423,471	-63,643	-14.5%	47,618	12.7%
0807915DHA	Dental Care Activities-OCONUS	40,358	40,460	35,079	102	0.3%	-5,381	-13.3%
	Subtotal In-House Care	**9,274,512**	**9,339,315**	**9,560,564**	**64,803**	**0.7%**	**221,249**	**2.4%**
Private Sector Care								
0807702DHA	Pharmaceuticals - Purchased Health Care	791,073	844,283	822,222	53,210	6.7%	-22,061	-2.6%
0807703DHA	Pharmaceuticals - National Retail Pharmacy	851,561	941,000	994,926	89,439	10.5%	53,926	5.7%
0807723DHA	TRICARE Managed Care Support (MCS) Contracts	6,098,189	6,271,756	6,052,019	173,567	2.8%	-219,737	-3.5%
0807738DHA	MTF Enrollees - Purchased Care	3,330,234	2,952,987	3,505,298	-377,247	-11.3%	552,311	18.7%
0807741DHA	Dental - Purchased Care	289,677	305,116	297,791	15,439	5.3%	-7,325	-2.4%
0807742DHA	Uniformed Services Family Health Program (USFHP)	545,842	622,340	594,611	76,498	14.0%	-27,729	-4.5%
0807743DHA	Supplemental Care - Health Care	1,324,653	1,426,726	1,537,278	102,073	7.7%	110,552	7.7%
0807745DHA	Supplemental Care - Dental	90,821	72,311	96,915	-18,510	-20.4%	24,604	34.0%
0807747DHA	Continuing Health Education/Capitalization of Assets Program	335,261	378,198	344,021	42,937	12.8%	-34,177	-9.0%
0807749DHA	Overseas Purchased Health Care	340,650	356,080	251,463	15,430	4.5%	-104,617	-29.4%
0807751DHA	Miscellaneous Purchased Health Care	1,078,217	955,363	1,220,432	-122,854	-11.4%	265,069	27.7%
0807752DHA	Miscellaneous Support Activities	130,108	136,508	124,911	6,400	4.9%	-11,597	-8.5%
	Subtotal Private Sector Care	**15,206,286**	**15,262,668**	**15,841,887**	**56,382**	**0.4%**	**579,219**	**3.8%**
Consolidated Health Support								
0801720DHA	Examining Activities	100,494	103,199	14,886	2,705	2.7%	-88,313	-85.6%
0807714DHA	Other Health Activities	518,269	504,583	381,356	-13,686	-2.6%	-123,227	-24.4%
0807705DHA	Military Public/Occupational Health	505,028	535,867	456,687	30,839	6.1%	-79,180	-14.8%
0807760DHA	Veterinary Services	29,112	31,207	2,921	2,095	7.2%	-28,286	-90.6%
0807724DHA	Military Unique Requirements - Other Medical	671,160	610,987	453,112	-60,173	-9.0%	-157,875	-25.8%
0807725DHA	Aeromedical Evacuation System	52,349	130,390	2,579	78,041	149.1%	-127,811	-98.0%
0807730DHA	Service Support to Other Health Activities - TRANSCOM	1,855	2,548	691	693	37.4%	-1,857	-72.9%
0807786DHA	Joint Pathology Center (JPC)	26,764	22,795	23,977	-3,969	-14.8%	1,182	5.2%
0903300DHA	Support to FACA Advisory Board Activities	1,387	2,092	2,060	705	50.8%	-32	-1.5%
	Subtotal Consolidated Health Support	**1,906,418**	**1,943,668**	**1,338,269**	**37,250**	**2.0%**	**-605,399**	**-31.1%**
Information Technology/Information Management								
0807744DHA	Theater Medical Information Program Joint (TMIP-J)	58,205	71,651	2,721	13,446	23.1%	-68,930	-96.2%
0807746DHA	Joint Operational Medicine Information Systems (JOMIS)	11,533	13,987	4,213	2,454	21.3%	-9,774	-69.9%
0807758DHA	Cybersecurity	0	151,398	138,574	151,398	0.0%	-12,824	100.0%
0807759DHA	Military Health System Desktop to Datacenter	0	426,133	297,055	426,133	0.0%	-129,078	100.0%
0807781DHA	Service Medical Information Management/Information Technology (Non-Central)	345,594	171,548	132,744	-174,046	-50.4%	-38,804	-22.6%
0807783DHA	DHP Information Management/Information Technology Support Programs	37,082	34,906	35,451	-2,176	-5.9%	545	1.6%
0807784DHA	Integrated Electronic Health Record	21,839	18,000	10,191	-3,839	-17.6%	-7,809	-43.4%
0807787DHA	DoD Healthcare Management Systems	356,314	433,988	480,551	77,674	21.8%	46,563	10.7%
0807788DHA	DoD Medical Information Exchange and Interoperability	47,423	47,503	53,590	80	0.2%	6,087	12.8%
0807793DHA	MHS Tri-Service Information Management/Information Technology	1,306,146	590,340	884,820	-715,806	-54.8%	294,480	49.9%
	Subtotal Information Management	**2,184,136**	**1,959,454**	**2,039,910**	**-224,682**	**-10.3%**	**80,456**	**4.1%**

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Cost of Medical Activities

(Dollars in Tho	DON'T FORGET TO DELETE HIDDEN ROWS	FY 2019 Actual[1]	FY 2020 Request[2]	FY 2021 Request[3]	FY 2019/2020 Change	FY 2019/2020 Percent	FY 2020/2021 Change	FY 2020/2021 Percent
Management Activities								
0807798DHA	Management Activities	169,296	85,405	81,162	-83,891	-49.6%	-4,243	-5.0%
0807704DHA	Defense Health Agency	141,182	244,841	249,465	103,659	73.4%	4,624	1.9%
0807709DHA	TRICARE Management Activity			0	0	0.0%	0	0.0%
	Subtotal Management Activities	**310,478**	**330,246**	**330,627**	**19,768**	**6.4%**	**381**	**0.1%**
Education and Training								
0806722DHA	Armed Forces Health Professions Scholarship Program	251,984	264,683	533	12,699	5.0%	-264,150	-99.8%
0806721DHA	Uniformed Services University of the Health Sciences	167,760	169,793	164,299	2,033	1.2%	-5,494	-3.2%
0806761DHA	Other Education and Training	325,885	314,833	150,859	-11,052	-3.4%	-163,974	-52.1%
	Subtotal Education and Training	**745,629**	**749,309**	**315,691**	**3,680**	**0.5%**	**-433,618**	**-57.9%**
Base Operations/Communications								
0806276DHA	Facilities Restoration and Modernization - CONUS	241,609	357,420	296,316	115,811	47.9%	-61,104	-17.1%
0806376DHA	Facilities Restoration and Modernization - OCONUS	18,248	107,422	94,665	89,174	488.7%	-12,757	-11.9%
0806278DHA	Facilities Sustainment - CONUS	513,930	503,072	450,046	-10,858	-2.1%	-53,026	-10.5%
0806378DHA	Facilities Sustainment - OCONUS	122,807	138,730	140,059	15,923	13.0%	1,329	1.0%
0807779DHA	Facilities Operations - Health Care - CONUS	469,741	501,220	461,935	31,479	6.7%	-39,285	-7.8%
0807979DHA	Facilities Operations - Health Care - OCONUS	54,709	54,463	55,117	-246	-0.4%	654	1.2%
0807795DHA	Base Communications - CONUS	50,402	51,364	49,609	962	1.9%	-1,755	-3.4%
0807995DHA	Base Communications - OCONUS	4,228	4,343	3,403	115	2.7%	-940	-21.6%
0807796DHA	Base Operations - CONUS	341,718	317,559	318,907	-24,159	-7.1%	1,348	0.4%
0807996DHA	Base Operations - OCONUS	22,866	21,064	23,276	-1,802	-7.9%	2,212	10.5%
0807754DHA	Pollution Prevention	504	286	292	-218	-43.3%	6	2.1%
0807756DHA	Environmental Compliance	22,479	25,179	19,647	2,700	12.0%	-5,532	-22.0%
0807790DHA	Visual Information Systems	6,507	9,070	9,333	2,563	39.4%	263	2.9%
0808093DHA	Demolition	0	0	0	0	#DIV/0!	0	0.0%
	Subtotal Base Operations/Communications	**1,869,748**	**2,091,192**	**1,922,605**	**221,444**	**11.8%**	**-168,587**	**-8.1%**
	Subtotal DHP Operation and Maintenance	**31,497,207**	**31,675,852**	**31,349,553**	**178,645**	**0.6%**	**-326,299**	**-1.0%**
Procurement (Program Elements 0807720DHA & 0807721DHA)								
	Dental Equipment	348	362	376	14	100.0%	14	3.9%
	Food Service, Preventive Medicine, and Pharmacy Equipment	2,659	3,929	4,029	1,270	47.8%	100	2.5%
	Medical Information System Equipment	149,571	14,527	8,401	-135,044	-90.3%	-6,126	-42.2%
	Medical Patient Care Administrative Equipment	5,781	6,898	7,036	1,117	19.3%	138	2.0%
	Medical/Surgical Equipment	16,299	23,952	24,622	7,653	47.0%	670	2.8%
	Other Equipment	33,093	25,619	31,386	-7,474	-22.6%	5,767	22.5%
	Pathology/Lab Equipment	12,444	21,484	22,256	9,040	72.6%	772	3.6%
	Radiographic Equipment	84,311	147,487	140,444	63,176	74.9%	-7,043	-4.8%
Procurement (Program Elements 0807746DHA)								
	Joint Operational Medicine Information System	0	0	0	0	0.0%	0	0.0%
Procurement (Program Elements 0807759DHA)								
	Data to Desktop Center	0	73,010	70,872	73,010	0.0%	-2,138	100.0%
Procurement (Program Elements 0807787DHA)								
	DoD Healthcare Management System Modernization	215,953	129,091	308,504	-86,862	-40.2%	179,413	139.0%
Procurement (Program Elements 0807788DHA)								
	DoD Medical Information Exchange and Interoprability	0	0	0	0	0.0%	0	100.0%
	Subtotal Procurement	**520,459**	**446,359**	**617,926**	**-74,100**	**-14.2%**	**171,567**	**38.4%**

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Cost of Medical Activities

(Dollars in Tho	DON'T FORGET TO DELETE HIDDEN ROWS	FY 2019 Actual[1]	FY 2020 Request[2]	FY 2021 Request[3]	FY 2019/2020 Change	FY 2019/2020 Percent	FY 2020/2021 Change	FY 2020/2021 Percent
Research, Development, Test and Evaluation								
0601101DHA	In-House Laboratory Independent Research (ILIR)	3,552	4,013	0	461	13.0%	-4,013	-100.0%
0601117DHA	Basic Operational Medical Research Sciences	8,400	17,408	8,913	9,008	107.2%	-8,495	-48.8%
0602115DHA	Applied Biomedical Technology	107,837	175,032	72,573	67,195	62.3%	-102,459	-58.5%
0602787DHA	Medical Technology (AFRRI)	1,307	1,383	1,411	76	5.8%	28	2.0%
0603002DHA	Medical Advanced Technology (AFRRI)	325	345	352	20	6.2%	7	2.0%
0603115DHA	Medical Technology Development	1,594,929	1,782,072	225,250	187,143	11.7%	-1,556,822	-87.4%
0604110DHA	Medical Products Support and Advanced Concept Development	158,933	138,055	132,331	-20,878	-13.1%	-5,724	-4.1%
0605013DHA	Information Technology Development	24,306	23,780	16,344	-526	-2.2%	-7,436	-31.3%
0605026DHA	DoD Healthcare Management System Modernization (DHMSM)	27,293	14,478	18,336	-12,815	-47.0%	3,858	26.6%
0605045DHA	Joint Operational Medicine Information System (JOMIS)	49,084	41,902	0	-7,182	-14.6%	-41,902	-100.0%
0605145DHA	Medical Products and Support Systems Development	24,921	21,589	21,068	-3,332	-13.4%	-521	-2.4%
0605502DHA	Small Business Innovative Research (SBIR) Program	66,784	0	0	-66,784	0.0%	0	0.0%
0606105DHA	Medical Program-Wide Activities	70,610	69,219	48,672	-1,391	-2.0%	-20,547	-29.7%
0607100DHA	Medical Products and Capabilities Enhancement Activities	15,140	16,819	17,215	1,679	11.1%	396	2.4%
0608045DHA	Software & Digital Technology Pilot Program	0	0	160,428	0	0.0%	160,428	100.0%
	Subtotal RDT&E	**2,153,421**	**2,306,095**	**722,893**	**152,674**	**7.1%**	**-1,583,202**	**-68.7%**
	Total Defense Health Program	**34,171,087**	**34,428,306**	**32,690,372**	**257,219**	**0.7%**	**-1,737,934**	**-5.3%**
	Special Interest Items							
Medicare Eligible Accrual Fund Receipts								
	Direct Care	1,750,565	1,853,500	1,920,100	102,935	5.9%	66,600	3.6%
	Private Sector Care	8,366,131	8,274,700	8,575,500	-91,431	-1.1%	300,800	3.6%
	Military Personnel Accounts	536,400	551,300	565,800	14,900	2.8%	14,500	2.6%
	Total Medicare Eligible Accrual Fund	**10,653,096**	**10,679,500**	**11,061,400**	**26,404**	**0.2%**	**381,900**	**3.6%**
Research, Development, Test & Evaluation By Program Title								
	Congressionally Directed Programs	1,470,300	1,573,822	0	103,522	7.0%	-1,573,822	-100.0%
	DHA Central Information Technology Development	19,341	20,198	16,344	857	4.4%	-3,854	-19.1%
	Service Information Technology Development	4,965	3,582	0	-1,383	-27.9%	-3,582	-100.0%
	Small Business Innovative Research	66,784	0	0	-66,784	-100.0%	0	0.0%
	Medical Technology Development	93,183	200,553	148,264	107,370	115.2%	-52,289	-26.1%
	Biomedical Technology	9,439	15,735	4,215	6,296	66.7%	-11,520	-73.2%
	Armed Forces Radiobiology Research Institute (AFRRI)	1,307	1,383	1,411	76	5.8%	28	2.0%
	In-House Laboratory Independent Research (ILIR)	3,552	4,013	0	461	13.0%	-4,013	-100.0%
	Medical Advanced Technology (AFRRI)	325	345	352	20	6.2%	7	2.0%
	Medical Products Support and Advanced Concept Development	523	4,000	4,080	3,477	664.8%	80	0.0%
	Medical Products and Support Systems Development	50	935	0	885	1770.0%	-935	-100.0%
	Medical Program-Wide Activities	63,610	67,219	48,672	3,609	5.7%	-18,547	-27.6%
	DoD Healthcare Management System Modernization (DHMSM)	27,293	14,478	18,336	-12,815	-47.0%	3,858	26.6%
	Joint Operational Medicine Information System (JOMIS)	49,084	41,902	0	-7,182	-14.6%	-41,902	-100.0%
	GDF Medical Research Enhancement	343,665	357,930	320,791	14,265	4.2%	-37,139	-10.4%
	Software & Digital Technology Pilot Program (JOMIS & TMIP - J)	0	0	160,428	0	0	160,428	100.0%
	Total Research, Development, Test and Evaluation	**2,153,421**	**2,306,095**	**722,893**	**152,674**	**7.1%**	**-1,583,202**	**-68.7%**

1/ FY 2019 Actuals includes OCO Actuals of 349.421M, Fisher House of $10.000M; CSI of -1,191.973 for O&M; +1,470.300M for RDT&E. It includes Realignment of $352.701M from PROC to O&M

2/ FY 2020 Enacted includes OCO funding of $347.746M, Fisher House of 10.000M and CSI of -490.425M for O&M; +1,573.822M for RDT&E; -7.965M for Proc

3/ FY 2021 reflects Requested Amounts excludes OCO funding of 365.098M

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Personnel Summary

	End Strength	Avg Strength	End Strength	Avg Strength	End Strength	Avg Strength	End Strength	Avg Strength
Active Military - Assigned to DHP								
Army Total	21,618	22,906	22,590	22,105	19,870	21,231	-2,720	-874
Officers	9,286	10,145	9,905	9,596	9,306	9,606	-599	10
Enlisted	12,332	12,761	12,685	12,509	10,564	11,625	-2,121	-884
Navy Total	27,895	28,163	27,462	27,679	24,030	25,747	-3,432	-1,932
Officers /1	8,784	8,654	9,366	9,075	8,871	9,119	-495	44
Enlisted	19,111	19,509	18,096	18,604	15,159	16,628	-2,937	-1,976
Air Force Total	29,214	27,910	27,687	28,451	26,417	27,053	-1,270	-1,398
Officers	10,477	9,571	9,553	10,015	9,318	9,436	-235	-579
Enlisted	18,737	18,339	18,134	18,436	17,099	17,617	-1,035	-819
Total Active Duty	78,727	78,979	77,739	78,235	70,317	74,031	-7,422	-4,204
Officers	28,547	28,370	28,824	28,686	27,495	28,161	-1,329	-525
Enlisted	50,180	50,609	48,915	49,549	42,822	45,870	-6,093	-3,679
/1 Includes one USMC DHP officer st:								
Active Military - Non DHP Medical								
Army Total	19,975	19,972	22,583	21,279	22,534	22,559	-49	1,280
Officers	4,136	4,133	5,674	4,905	5,715	5,695	41	790
Enlisted	15,839	15,839	16,909	16,374	16,819	16,864	-90	490
Navy Total	11,705	11,656	12,263	11,984	13,148	12,706	885	722
Officers	2,291	2,254	2,600	2,446	2,823	2,712	223	266
Enlisted	9,414	9,402	9,663	9,539	10,325	9,994	662	456
Air Force Total	2,218	2,225	3,122	2,670	3,191	3,157	69	487
Officers	873	878	1,224	1,049	1,283	1,254	59	205
Enlisted	1,345	1,348	1,898	1,622	1,908	1,903	10	282
Total Active Duty	33,898	33,852	37,968	35,933	38,873	38,421	905	2,488
Officers	7,300	7,264	9,498	8,399	9,821	9,660	323	1,261
Enlisted	26,598	26,588	28,470	27,534	29,052	28,761	582	1,227

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Personnel Summary

I. Civilian Personnel - US Direct Hire								
Army	36,895	34,112	34,311	33,475	31,255	31,066	-3,056	-2,409
Navy	11,044	10,767	9,755	9,508	9,095	8,848	-660	-660
Air Force	5,908	5,874	6,096	5,357	5,872	4,952	-224	-405
Defense Health Agency	9,867	9,682	9,860	9,844	9,954	9,938	94	94
Total	63,714	60,435	60,022	58,184	56,176	54,804	-3,846	-3,380
II. Civilian Personnel - Foreign National Direct Hire								
Army	617	616	480	475	480	475	0	0
Navy	416	342	365	342	363	340	-2	-2
Air Force	190	190	171	172	193	172	22	0
Defense Health Agency	0	0	0	0	0	0	0	0
Total	1,223	1,148	1,016	989	1,036	987	20	-2
III. Civilian Personnel - Foreign National Indirect Hire								
Army	737	738	795	775	549	533	-246	-242
Navy	471	471	448	430	448	430	0	0
Air Force	172	173	165	161	167	161	2	0
Defense Health Agency	3	3	5	5	5	5	0	0
Total	1,383	1,385	1,413	1,371	1,169	1,129	-244	-242
IV. Total Civilian Personnel								
Army	38,249	35,466	35,586	34,725	32,284	32,074	-3,302	-2,651
Navy	11,931	11,580	10,568	10,280	9,906	9,618	-662	-662
Air Force	6,270	6,237	6,432	5,690	6,232	5,285	-200	-405
Defense Health Agency	9,870	9,685	9,865	9,849	9,959	9,943	94	94
Total /1	66,320	62,968	62,451	60,544	58,381	56,920	-4,070	-3,624
V. Summary Civilian Personnel								
U.S. Direct Hire	63,714	60,435	60,022	58,184	56,176	54,804	-3,846	-3,380
Foreign National Direct	1,223	1,148	1,016	989	1,036	987	20	-2
Foreign National Indirec	1,383	1,385	1,413	1,371	1,169	1,129	-244	-242
Total, Civilians /1	66,320	62,968	62,451	60,544	58,381	56,920	-4,070	-3,624
/1 Includes reimbursable civilians	242	238	207	202	206	201	-1	-1

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Personnel Summary

	FY 2019 Actual		FY 2020 Estimate		FY 2021 Estimate		FY20-21 Change	
	End Strength	FTEs	End Strength	FTEs	End Strength	FTEs	End Strength	FTEs
SPECIAL INTEREST MANPOWER								
Defense Health Agency Management Headquarters (PE 0807898)								
Military	42	30	47	45	47	47	0	3
Civilian	241	228	239	239	239	239	0	0
Army Management Headquarters (PE 0807798)								
Military	138	161	0	69	0	0	0	-69
Civilian	420	426	7	0	0	0	-7	0
Navy Management Headquarters (PE 0807798)								
Military	201	206	53	127	57	55	4	-72
Civilian	188	185	111	108	111	108	0	0
Air Force Management Headquarters (PE 0807798)								
Military	340	329	7	174	7	7	0	-167
Civilian	78	117	7	0	0	0	-7	0

Note: Some numbers might not add due to rounding.

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Medical Workload Data - DHP Summary

	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Population - Eligible Beneficiaries, CONUS					
Active Duty **	1,427,115	1,437,151	1,442,298	10,036	5,147
Active Duty Family Members	1,818,967	1,834,942	1,844,293	15,975	9,351
Retirees	1,018,038	1,010,997	1,005,149	-7,041	-5,849
Family Members of Retirees	2,480,329	2,471,456	2,463,849	-8,873	-7,607
Subtotal Eligible	**6,744,449**	**6,754,546**	**6,755,588**	**10,097**	**1,042**
Medicare Eligible Beneficiaries ***	2,397,612	2,419,560	2,440,669	21,948	21,109
Total Average Eligible Beneficiaries	**9,142,061**	**9,174,106**	**9,196,257**	**32,045**	**22,152**
Population - Eligible Beneficiaries, OCONUS					
Active Duty **	163,562	164,528	164,821	966	292
Active Duty Family Members	131,690	132,497	132,686	807	189
Retirees	22,359	22,217	22,103	-142	-114
Family Members of Retirees	58,122	57,940	57,789	-182	-151
Subtotal Eligible	**375,733**	**377,182**	**377,398**	**1,449**	**216**
Medicare Eligible Beneficiaries	40,618	40,955	41,284	337	329
Total Average Eligible Beneficiaries	**416,351**	**418,138**	**418,682**	**1,787**	**544**
Population - Eligible Beneficiaries, Worldwide					
Active Duty **	1,590,677	1,601,680	1,607,119	11,003	5,439
Active Duty Family Members	1,950,657	1,967,439	1,976,979	16,782	9,540
Retirees	1,040,397	1,033,214	1,027,251	-7,183	-5,963
Family Members of Retirees	2,538,451	2,529,396	2,521,637	-9,055	-7,758
Subtotal Eligible	**7,120,182**	**7,131,728**	**7,132,986**	**11,546**	**1,258**
Medicare Eligible Beneficiaries:					
Active Duty Family Members	4,896	4,925	4,935	29	10
Guard/Reserve Family Members	1,464	1,486	1,510	22	24
Eligible Retirees	1,175,156	1,187,989	1,199,918	12,833	11,929
Eligible Family Members of Retirees ****	763,684	771,982	779,704	8,298	7,722
Survivor	491,088	492,192	493,944	1,104	1,753
Other	1,942	1,942	1,942	0	0
Total Medicare Eligible Beneficiaries	**2,438,230**	**2,460,515**	**2,481,953**	**22,285**	**21,438**
Total Average Eligible Beneficiaries	**9,558,412**	**9,592,243**	**9,614,939**	**33,831**	**22,696**

Notes:

1. (*) FY 2019-2021 Estimates are projected numbers of MHS eligible beneficiaries and are based on (a) future Budget End Strengths of Active Duty and Active Guard/Reserve members and (b) the DoD's Actuary's projection of retirees.

2. (**) Active Duty and Active Duty Guard/Reserve beneficiaries were excluded from being counted as Medicare Eligible.

3. (***) The US "Medicare Eligible Beneficiaries" are defined as MERHCF beneficiaries: Active Duty Family Members, Guard/Reserve Family Members, Eligible Retirees, Eligible Family Members of Retirees, Inactive Guard/Reserve, Inactive Guard/Reserve Family Members, Survivors, and Others.

4. (****) The Worldwide "Eligible Family Members of Retirees" are defined as MERHCF beneficiaries: Family Members of Retirees, Inactive Guard/Reserves, and Inactive Guard/Reserve Family Members.

5. Numbers may not sum to totals due to rounding.

6. USFHP enrollees who are also Medicare Eligible are shown in Eligible Beneficiaries, not under Medicare Eligible Beneficiaries.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Medical Workload Data - DHP Summary

Enrollees - Direct Care	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
TRICARE Region - East	1,845,831	1,854,506	1,856,207	8,675	1,701
TRICARE Region - West	976,167	977,838	977,172	1,670	-666
TRICARE Region - Europe	72,572	72,572	72,572	0	0
TRICARE Region - Pacific	151,520	151,257	151,435	-263	178
TRICARE Region - Latin America	2,602	2,602	2,602	0	0
Alaska	53,670	54,010	53,892	340	-119
Sub-Total CONUS Regions	2,875,668	2,886,354	2,887,271	10,686	917
Sub-Total OCONUS Regions	226,694	226,432	226,609	-263	178
Total Direct Care Enrollees	3,102,363	3,112,786	3,113,880	10,423	1,095

Source: Service Medical Departments Business Plans
Enrollees are only TRICARE PRIME Enrollees enrolled to a military treatment facility.
Excludes "Plus" empaneled and other TRICARE space available users.
Effective January 1, 2018, TRICARE North and South Regions combined to form TRICARE East in accordance with the 2017 National Defense Authorization Act.

Prime Enrollees - Managed Care Support Contract*	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
TRICARE Region - East (old North and South Regions)	863,777	858,355	860,001	-5,422	1,646
TRICARE Region - West	357,473	355,747	356,868	-1,726	1,121
Total MCS Contracts	1,221,250	1,214,102	1,216,869	-7,148	2,767
TRICARE Select Enrollees	**Actuals**	**Estimate***	**Estimate***	**Change**	**Change**
TRICARE Region - East (old North and South Regions)	1,431,511	1,414,226	1,410,458	-17,285	-3,768
TRICARE Region - West	585,026	578,336	577,109	-6,690	-1,227
Total Select	2,016,537	1,992,562	1,987,567	-23,975	-4,995
TRICARE Non-Enrolled	**Actuals**	**Estimate***	**Estimate***	**Change**	**Change**
TRICARE Region - East (old North and South Regions)	109,213	108,509	108,761	-704	252
TRICARE Region - West	48,135	47,822	47,912	-313	90
Total Non-Enrolled	157,348	156,331	156,673	-1,017	342
TRICARE Region - Overseas - Europe, Pacific, Latin America	416,112	418,336	420,259	2,224	1,923
Total MCSC, Select and TRICARE Overseas	3,811,247	3,781,331	3,781,368	-29,916	37

*Note:
(1) Private Sector Care (PSC) Enrollees: New methods for PSC Enrollee counts are available by category of care as Prime, Select and Non-Enrolled and Overseas population benefits.
(2) Prime enrollment, Select and Non-Enrolled exclude TRICARE for Life beneficiaries paid by MERHCF. Managed Care Forcasting and Analysis System (MCFAS) is the source for Civilian Prime, Overseas, Select enrollment and Non-Enrolled future year estimates. Source for MCSC enrollees is M2 (DEERS). FY 2020 and FY 2021 estimates exclude OCO, and is estimated at 1% of eligible population.
(3) Oversees enrollee counts include Prime, Prime Remote and Select beneficiaries enrolled under TOP contract. Counts for Select enrollees begin in July FY 2019.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Medical Workload Data - DHP Summary

Infrastructure	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Inpatient Facilities	50	50	50	0	0
Medical Clinics	425	425	425	0	0
Dental Clinics	246	246	246	0	0
Veterinary Clinics	251	251	251	0	0

Notes:
1. The FY 2020 Budget Request reflected an estimate of 49 in-patient facilities, 427 medical clinics 246 dental clinics, and 251 Veterinary Clinics.
2. Infrastructure reporting includes Army Embedded Health Clinics and exclude Air Force Line clinics to more accurately reflect those Defense Health Program funded activities generating direct care workload.
3. Inpatient Facilities (+1): In the FY20 Budget Request, it was noted that the 633rd Medical Group JBLE Langley would transition from a hospital into a clinic in FY20, however, the transition did not take place. Therefore, 633rd Medical Group JBLE is counted in the "Inpatient Facility" total.
4. Medical Clinics (-2): Army deactivated Trauma Brain Injury Clinic-Riley & CMBH Mountain Post-Carson
5. Dental Clinics (No Change):
6. Veterinary Clinics: (No change).
7. Inpatient Facilities, Medical Clinics, Dental Clinics, and Veterinary Clinics : No projected changes for FY 2019 - FY 2021

Direct Care System Workload (from M2 and Business Planning Tool)	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Inpatient Admissions, Non-Weighted (SIDR Dispositions-All)	198,864	200,837	200,634	1,973	-204
Inpatient Admissions, Weighted (MS-DRG RWPs, Non Mental Health)	166,998	168,496	168,625	1,497	129
Inpatient Admissions, Occupied Bed Days (Mental Health Only)	89,787	91,080	91,453	1,293	373
Average Length of Stay (ALL Bed Days/All Dispositions)	2.60	2.60	2.60	0	0.00
Ambulatory Visits, Non-Weighted (Encounters, CAPER)	38,273,648	38,282,904	38,296,219	9,256	13,315
Ambulatory Visits, Weighted (Adj Provider Aggregate RVUs, CAPER)	74,438,658	74,417,542	74,348,424	-21,115	-69,118
Ambulatory Procedures, Weighted (Aggregate Weight APCs, CAPER)	10,194,682	10,225,782	10,205,917	31,100	-19,865
Number of Outpatient Pharmacy Prescriptions "Scripts"	42,320,073	42,459,546	42,462,360	139,473	2,814

Notes:
1. Data source is M2 and performance plans.
2. Workload excludes Tricare for Life (TFL) patients.

Dental Workload (Dental Weighted Values (DWVs) (from Components)	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
CONUS	11,128,387	10,930,082	10,983,058	-198,305	52,975
OCONUS	2,102,719	2,101,462	2,112,740	-1,257	11,278
Total DWVs	13,231,106	13,031,544	13,095,797	-199,562	64,253
CONUS					
Active Duty	10,420,071	10,235,845	10,288,955	-184,226	53,111
Non-Active Duty	708,316	694,238	694,102	-14,078	-136
Total CONUS	11,128,387	10,930,082	10,983,058	-198,305	52,975
OCONUS					
Active Duty	1,607,293	1,609,863	1,618,826	2,570	8,963
Non-Active Duty	495,426	491,599	493,914	-3,827	2,315
Total OCONUS	2,102,719	2,101,462	2,112,740	-1,257	11,278

Note: The FY 2019 to FY 2020 decrease is due to an anticipated decrease in available providers. The FY 2020 to FY 2021 increase is due to service component performance plan projections.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Medical Workload Data - DHP Summary

Private Sector Workload

Notes: * a) All data excludes MERHCF, USFHP, TRS. (b) New contract (Jan 2018) has two regions and overseas. MCSC benefit changed from: Prime, Standard, Extra and TRICARE Overseas to Prime, Select and Overseas, (c) Units of measure: Outpatient workload = Total RVUs; Inpatient workload used RWP-DRGs, included all Major Diagnostic Codes (e.g., surgical, mental health, internal medicine, etc.). (c) workload is all workload provided in Private Sector locations regardless of patient's enrollment status, (d) FY20 and FY21 excludes OCO workload. OCO estimated at 1% of total workload (roughly 90K OCO divided by Roughly 9.5M TRICARE eligibles).

Private Sector Care System Workload	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Outpatient-Visits	65,648,325	64,709,234	64,884,661	-939,091	175,427
Outpatient-Weighted (Relative Value Units, RVUs)	127,027,349	125,246,986	125,596,389	-1,780,363	349,403
Inpatient-Admissions	315,586	311,271	312,191	-4,315	920
Inpatient-Weighted (Relative Weighted Products, RWPs)	296,275	292,188	293,030	-4,087	842

Pharmacy	FY 2019 Actuals	FY 2020 Estimate*	FY 2021 Estimate*	FY 2019-2020 Change	FY 2020-2021 Change
Retail					
Number of Scripts	19,414,536	19,702,515	20,343,035	287,979	640,520
Mail Order					
Number of Scripts	4,904,462	4,852,276	4,866,700	-52,186	14,424
TRICARE Dental Program Enrollment	680,845	681,269	681,694	424	425
Uniformed Services Family Health Plan					
Enrollees (Non-Medicare eligible, DoD Only)	98,323	103,919	109,834	5,596	5,915

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Advisory and Assistance Services

Appropriation: Operation & Maintenance

	FY 2019 Estimate	FY 2020 Enacted	FY 2021 Estimate
I. Management & Professional Support Services			
FFRDC Work	20,734	4,628	4,273
Non-FFRDC Work	483,081	331,654	308,246
Subtotal	503,815	336,282	312,519
II. Studies, Analyses & Evaluation			
FFRDC Work	28,107	8,354	6,876
Non-FFRDC Work	83,153	41,295	22,320
Subtotal	111,260	49,649	29,196
III. Engineering & Technical Services			
FFRDC Work	483		
Non-FFRDC Work	213,955	5,339	5,316
Subtotal	214,438	5,339	5,316
Total	829,513	391,270	347,031

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Funds Budgeted for Environmental Projects

OPR & MAINT	FY 2019	FY 2020	FY 2021
Active			
Domestic			
Compliance			
Air			
Stationary and Mobile Sources	0.031	0.031	0.021
Compliance Cross-Cutting Programs			
Compliance Education and Training	1.825	2.371	2.327
Multi-Program Management	1.200	1.558	0.886
Total Compliance Cross-Cutting Programs	**3.025**	**3.929**	**3.213**
Compliance Manpower			
Compliance Manpower	6.186	6.693	4.217
Compliance Other			
Miscellaneous Compliance Activities	1.630	1.702	1.314
Compliance Related Cleanup			
Other Compliance-Related Assessment and Cleanup	0.000	0.000	0.000
Planning			
Environmental Impact Analysis	0.075	0.075	0.080
Storage and Disposal			
Hazardous Waste (RCRA - C)	4.222	4.723	4.543
Solid Waste (RCRA - D)	2.420	2.815	2.028
USTs (RCRA - I)	0.000	0.000	0.000
Total Storage and Disposal	**6.642**	**7.538**	**6.571**
Toxic Substances			
Controlled Substances	0.000	0.000	0.000
EPCRA Reporting (TRI and Tier I&II)	0.005	0.005	0.005
Total Toxic Substances	**0.005**	**0.005**	**0.005**
Water			
Safe Drinking Water	1.862	1.594	1.606
Spill Prevention and Response/ASTs	0.029	0.036	0.020
Stormwater	0.000	0.000	0.000
Wastewater	0.025	0.035	0.025
Total Water	**1.916**	**1.665**	**1.651**
Total Compliance	**19.510**	**21.638**	**17.072**
Pollution Prevention			
Pollution Prevention Other			
Miscellaneous Pollution Prevention Activities	0.000	0.000	0.000

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Funds Budgeted for Environmental Projects

OPR & MAINT	FY 2019	FY 2020	FY 2021
Active (Continued)			
Domestic (Continued)			
Pollution Prevention (Continued)			
Pollution Prevention Projects			
Hazardous Material / Hazardous and Solid Waste Reduction	0.504	0.286	0.292
Total Pollution Prevention	**0.504**	**0.286**	**0.292**
Total Domestic	**20.014**	**21.924**	**17.364**

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Funds Budgeted for Environmental Projects

OPR & MAINT	FY 2019	FY 2020	FY 2021
Active (Continued)			
Foreign			
Compliance			
Air			
Stationary and Mobile Sources	0.004	0.004	0.003
Compliance Cross-Cutting Programs			
Compliance Education and Training	0.144	0.148	0.146
Multi-Program Management	0.165	0.220	0.108
Total Compliance Cross-Cutting Programs	**0.309**	**0.368**	**0.254**
Compliance Manpower			
Compliance Manpower	0.580	0.928	0.532
Compliance Other			
Miscellaneous Compliance Activities	0.038	0.039	0.025
Planning			
Environmental Impact Analysis	0.000	0.000	0.000
Storage and Disposal			
Hazardous Waste (RCRA - C)	0.609	0.675	0.564
Solid Waste (RCRA - D)	0.815	0.900	0.542
USTs (RCRA - I)	0.000	0.000	0.000
Total Storage and Disposal	**1.424**	**1.575**	**1.106**
Toxic Substances			
EPCRA Reporting (TRI and Tier I&II)	0.000	0.000	0.000
Water			
Safe Drinking Water	0.614	0.627	0.638
Total Compliance	**2.969**	**3.541**	**2.558**
Pollution Prevention			
Pollution Prevention Projects			
Hazardous Material / Hazardous and Solid Waste Reduction	0.000	0.000	0.000
Total Pollution Prevention	**0.000**	**0.000**	**0.000**
Total Foreign	**2.969**	**3.541**	**2.558**

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Summary of Funds Budgeted for Environmental Projects

OPR & MAINT	FY 2019	FY 2020	FY 2021
Active (Summary)			
Environmental Activity Cost Type Totals			
Compliance	22.479	25.179	19.630
Pollution Prevention	0.504	0.286	0.292
Conservation	0.000	0.000	0.000
Total	**22.983**	**25.465**	**19.922**
Location Totals			
Domestic	20.014	21.924	17.364
Foreign	2.969	3.541	2.558
Total	**22.983**	**25.465**	**19.922**

DHA TOTALS			
Environmental Activity Cost Type Totals			
Compliance	22.479	25.179	19.630
Pollution Prevention	0.504	0.286	0.292
Conservation	0.000	0.000	0.000
Total	**22.983**	**25.465**	**19.922**
Location Totals			
Domestic	20.014	21.924	17.364
Foreign	2.969	3.541	2.558
Total	**22.983**	**25.465**	**19.922**

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Procurement Program

Appropriation Procurement ($ M) **Date: February 2020**

Line No.	Item Nomenclature	FY 2019 Actual	FY 2020 Base	FY 2020 OCO	FY 2020 Total Enacted[1]	FY 2021 Base	FY 2021 OCO	FY 2021 Total Request	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate
1	**Items greater than $250,000 each:**											
	Medical Equipment - Replacement/Modernization	274.450	225.774	0.000	225.774	215.618	0.000	215.618	250.366	260.175	269.593	279.366
	Medical Equipment - New Facility Outfitting	30.056	18.484	0.000	18.484	22.932	0.000	22.932	26.926	27.625	28.344	29.449
	Joint Operational Medicine Information System	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Military Health System - Desktop to Datacenter	0.000	73.010	0.000	73.010	70.872	0.000	70.872	72.302	0.000	0.000	0.000
	Information Technology Development and Sustainment - DoD Healthcare Management System Modernization	215.953	129.091	0.000	129.091	308.504	0.000	308.504	435.414	327.732	31.033	0.000

[1] Enacted includes Congressional reduction $0.314M for JOMIS and $7.651M for New facility Outfitting

The Defense Health Program (DHP) procurement budget represents a critical element of the Department's capability to provide high quality, cost effective health care for active duty and other eligible beneficiaries. Funds identified in this submission support the acquisition of equipment for facilities in the Army, Navy, Air Force, and National Capital Region Medical Directorate (NCRMD). Those facilities range from sophisticated tertiary care medical centers to outpatient and dental clinics and physiological training units. This equipment is essential to provide high quality health care services that meet accepted standards of practice. The required safety standards, related laws and regulatory requirements from credentialing and health care standard setting organizations influence and affect the requirement for, cost of, and replacement and modernization of medical equipment. Without the identified resources, the DHP's capability to meet the Department's medical equipment requirements will be severely degraded.

The most significant medical equipment investments will be in the radiographic, surgical, and information systems functional areas. The driving factors are rapid technological advancements in these areas and the need for DoD's health care delivery system to maintain the standards of care set by the civilian health care sector. Procurement investments for information systems will cover software license acquisitions, infrastructure, and hardware replacement supporting the Department of Defense's Military Health System (MHS) Information Technology.

The new facility outfitting program element of the DHP's procurement budget funds the acquisition and installation of commercially available equipment to furnish new and expanded facilities being completed under military construction projects in support of dental services, health care delivery, health care training, and other health care activities. The items range from dental, surgical, radiographic, and pathologic equipment to medical administrative support equipment. The new facility outfitting program provides critical support to the DHP's military medical construction program.

Joint Operational Medicine Information Systems funding will be used to acquire and field Department of Defense's (DoD's) operational medicine information systems using Military Health System (MHS) GENESIS Electronic Health Record (EHR), while developing and fielding new theater capabilities that enable comprehensive health services to meet Warfighter requirements for military medical operations. Joint Operational Medicine Information Systems serve as the primary tactical system to meet the needs of the Warfighter by enabling the provision of coordinated healthcare services. Procurement will be used for integration activities, software Licenses, utilities and tools. Funding will also be used to to support maintenance of government-approved laboratory infrastructure, software maintenance, hardware procurement and technical refreshes.

The MHS Desktop to Datacenter includes resources for the design, build, testing, installation, fielding, upgrades and sustainment of information technology (IT) supporting the DoD's ability to provide and maintain infrastructure and enterprise support services for Military Health System (MHS) centrally managed IT systems in all managed health care regions worldwide.

The DHMSM program acquired an integrated inpatient/outpatient Best of Suite (BoS) electronic health record (EHR) solution, augmented by the Best of Breed (BoB) product(s). The overarching goal of the program is to enable healthcare teams to deliver high-quality, safe care and preventive services to patients through the use of easily accessible standards-based computerized patient records. The anticipated benefits include: improved accuracy of diagnoses and medication; improved impact on health outcomes; increased patient participation in the healthcare process; improved patient-centered care coordination; and increased practice efficiencies in all settings, including all DoD operational environments.

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Procurement Budget Item Justification

BUDGET ITEM JUSTIFICATION SHEET DATE: February 2020

APPROPRIATION / BUDGET ACTIVITY : 97*0130 P-1 ITEM NOMENCLATURE: Replacement/Modernization

	FY 2019 Actual	FY 2020 Enacted	FY 2021 Base	FY 2021 OCO	FY 2021 Total Request	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate
Quantity									
Total Cost ($ M)	274.450	225.774	215.618	0.000	215.618	250.366	260.175	269.593	279.366
Dental Equipment	0.348	0.362	0.376	0.000	0.376	0.391	0.406	0.422	0.438
Food Ser, Preventive Med, Pharmacy	2.361	3.585	3.724	0.000	3.724	6.869	7.020	7.177	7.340
Medical Information System Equipmen	149.571	14.527	8.401	0.000	8.401	8.570	8.740	8.914	9.093
Medical Patient Care Administrative	5.781	6.898	7.036	0.000	7.036	7.177	7.320	7.467	7.617
Medical/Surgical Equipment	14.807	22.237	23.098	0.000	23.098	23.999	24.935	25.907	26.917
Other Equipment	10.010	15.130	15.556	0.000	15.556	15.867	16.185	16.509	16.839
Pathology/Lab Equipment	12.079	21.063	21.883	0.000	21.883	22.736	23.623	24.545	25.503
Radiographic Equipment	79.493	141.972	135.544	0.000	135.544	164.757	171.946	178.652	185.619

REMARKS

The most significant medical equipment investments will be in the radiographic, surgical, pathology/lab and information systems functional areas. The driving factors are rapid technological advancements in these areas and the need for DoD's health care delivery system to maintain the standards of care set by the civilian health care sector. Procurement investments for information systems will cover software license acquisitions, infrastructure, and hardware replacement supporting the Department of Defense's Military Health System (MHS) Information Technology.

Financing an adequate equipment acquisition budget is critical in retaining the Department's medical workload in-house and controlling escalating purchased healthcare O&M costs in the private sector. The items supported by this budget are the result of an extensive investment equipment justification process and are necessary to provide properly trained medical department personnel and high quality, cost effective health care services for the eligible beneficiary population.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Procurement Budget Item Justification

BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2020

APPROPRIATION / BUDGET ACTIVITY : 97*0130

P-1 ITEM NOMENCLATURE: New Facility Outfitting

	FY 2019 Actual	FY 2020 Enacted	FY 2021 Base	FY 2021 OCO	FY 2021 Total Request	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate
Quantity									
Total Cost ($ M)	30.056	18.484	22.932	0.000	22.932	26.926	27.625	28.344	29.449
Dental Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Food Ser, Preventive Med, Pharmacy	0.298	0.344	0.305	0.000	0.305	0.363	0.377	0.392	0.407
Medical Information System Equipmen	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Medical Patient Care Administrative	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Medical/Surgical Equipment	1.492	1.715	1.524	0.000	1.524	1.813	1.884	1.957	2.033
Other Equipment	23.083	10.489	15.830	0.000	15.830	18.479	18.849	19.226	19.976
Pathology/Lab Equipment	0.365	0.421	0.373	0.000	0.373	0.444	0.461	0.479	0.498
Radiographic Equipment	4.818	5.515	4.900	0.000	4.900	5.827	6.054	6.290	6.535

REMARKS FY20 enacted includes the Congressional reduction of $7.651M

The new facility outfitting program element of the DHP's procurement budget funds the acquisition and installation of commercially available equipment to furnish new and expanded facilities being completed under military construction projects in support of dental services, health care delivery, health care training, and other health care activities. The items range from dental, surgical, radiographic, and pathologic equipment to medical administrative support equipment. The new facility outfitting program provides critical support to the DHP's military medical construction program.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Procurement Budget Item Justification

BUDGET ITEM JUSTIFICATION SHEET DATE: February 2020

APPROPRIATION / BUDGET ACTIVITY : 97*0130

P-1 ITEM NOMENCLATURE: Joint Operational Medicine Information System (JOMIS)

	FY 2019 Actual	FY 2020 Enacted	FY 2021 Base	FY 2021 OCO	FY 2021 Total Request	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate
Quantity									
Total Cost ($ M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JOMIS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

REMARKS: FY20 enacted includes the Congressional reduction of $0.314M; Starting FY21 all JOMIS funding will be in the Software & Digital Technology Budget Activity in the Research, Development, Test & Evaluation (RDT&E).

The purpose of the Department of Defense (DoD) Joint Operational Medicine Information Systems (JOMIS) Program is to modernize, deploy, and sustain the DoD's operational medicine information systems using MHS GENESIS Electronic Health Record (EHR), while developing and fielding new theater capabilities that enable comprehensive health services to meet Warfighter requirements for military medical operations. JOMIS is intended to function in constrained, intermittent, and non-existent communications environments while providing access to authoritative sources of clinical data. The JOMIS Program is declared Joint Interest for capability requirements to be executed under the Joint Capabilities Integration and Development System (JCIDS) and the oversight of the Joint Requirements Oversight Council (JROC).

The goals of the JOMIS Increment 1 Program are to:
- Meet existing and emerging operational medicine requirements in the theater
- Fully leverage MHS GENESIS for medical care in Theater
- Provide two way information flow between garrison and theater environments in support of a longitudinal health record

Anticipated benefits of the JOMIS Increment 1 Program include:
- Delivery of uniform clinical information across both garrison and theater environments through the use of MHS GENESIS EHR
- Enhancements to the clinical care and information captured at all levels of care in tactical environments
- Transmission of critical information to the combatant commander, the evacuation chain for combat and non-combat casualties

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Procurement Budget Item Justification

BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2020

APPROPRIATION / BUDGET ACTIVITY : 97*0130

P-1 ITEM NOMENCLATURE: Military Health System (MHS) - Desktop to Datacenter (D2D)

	FY 2019 Actual	FY 2020 Enacted	FY 2021 Base	FY 2021 OCO	FY 2021 Total Request	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate
Quantity									
Total Cost ($ M)	0.000	73,010	70.872	0.000	70.872	72.302	0.000	0.000	0.000
MHS D2D	0.000	73,010	70.872	0.000	70.872	72.302	0.000	0.000	0.000

REMARKS

The MHS Desktop to Datacenter D2D includes resources for the design, build, testing, installation, fielding, upgrades and sustainment of information technology (IT) supporting the DoD's ability to provide and maintain infrastructure and enterprise support services for Military Health System (MHS) centrally managed IT systems in all managed health care regions worldwide.
This includes the following: (1) Network Security Management Service (NSMS): Seamless integrated wide, local and wireless network allowing health care providers/staff to move from hospital to hospital and authenticate to all IT services without the need of separate accounts; (2) Desktop as a Service (DaaS): Desktop design standardization across the application, desktop and server environments allowing providers/staff ability to access information between medical facilities; (3) Compute and Storage Management (CSMS): Centrally managed integrated, robust computing infrastructure that provides a standard method to host applications and the ability to use single applications to support health care encounters; (4) Directory Services Enterprise Management (DSEM): Centralized, secure access and authentication capability to network resources that allows providers and staff to all IT services without the need of multiple accounts; (5) Global Service Center (GSC): Consolidated MHS enterprise IT Service Desk allowing for a single point of contact for all customers regardless of physical location.
Resources will also encompass: Circuits, Network Service Operations Center (NSOC), MESOC Regional Services, Video Network Center (VNC), Lifecycle Management (Asset Management Support Services - AMSS &, Enterprise Software Management - ESM), Performance Planning Management (PPM), Boundary Services and Server Sustainment.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
Procurement Budget Item Justification

BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2020

APPROPRIATION / BUDGET ACTIVITY : 97*0130

P-1 ITEM NOMENCLATURE: Information Technology Development and Sustainment - DoD Healthcare Management System Modernization (DHMSM)

	FY 2019 Actual	FY 2020 Enacted	FY 2021 Base	FY 2021 OCO	FY 2021 Total Request	FY 2022 Estimate	FY 2023 Estimate	FY 2024 Estimate	FY 2025 Estimate
Quantity									
Total Cost ($ M)	215.953	129.091	308.504	0.000	308.504	435.414	327.732	31.033	0.000
DHMSM	215.953	129.091	308.504	0.000	308.504	435.414	327.732	31.033	0.000

REMARKS

DHMSM will replace the DoD legacy healthcare management systems with a commercial off-the-shelf capability that is open, modular, and standards-based with non-proprietary interfaces. DHMSM will support the Department's goals of net- centricity by providing a framework for full human and technical connectivity and interoperability that allows DoD users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence, and protects information from those who should not have it. Once fielded, the Electronic Health Record (EHR) will support the following healthcare activities for DoD's practitioners and beneficiaries:

- Clinical workflow and provider clinical decision support;
- Capture, maintain, use, protect, preserve and share health data and information;
- Retrieval and presentation of health data and information that is meaningful for EHR users regardless of where the patient's records are physically maintained; and
- Analysis and management of health information from multiple perspectives to include population health, military medical readiness, clinical quality, disease management, and medical research.

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance
RDT&E Programs

RDT&E Programs

Appropriation: RDT&E, Defense Health Program ($s M) **Date:** January 2020

R-1 Line Item No	Program Element Number	Item	Budget Activity	FY 2019 Actuals[1]	FY 2020 Request[2]	FY 2021 Base	FY 2021 OCO	FY 2021 Total Estimate	FY 2022 Estimates	FY 2023 Estimates	FY 2024 Estimates	FY 2025 Estimates
1	0601101	In-House Laboratory Independent Research (ILIR)	2	3.552	4.013	0.000	0.000	0.000	0.000	0	0	0
2	0601117	Basic Operational Medical Research Sciences	2	8.400	17.408	8.913	0.000	8.913	9.091	9.273	9.458	9.647
3	0602115	Applied Biomedical Technology	2	107.837	175.032	72.573	0.000	72.573	74.024	75.505	77.015	78.56
4	0602787	Medical Technology (AFRRI)	2	1.307	1.383	1.411	0.000	1.411	1.439	1.468	1.497	1.527
5	0603002	Medical Advanced Technology (AFRRI)	2	0.325	0.345	0.352	0.000	0.352	0.359	0.366	0.373	0.380
6	0603115	Medical Technology Development	2	1,594.929	1,782.072	225.250	0.000	225.250	235.197	240.22	245.344	250.58
7	0604110	Medical Products Support and Advanced Concept Development	2	158.933	136.055	132.331	0.000	132.331	142.252	145.097	147.999	150.959
8	0605013	Information Technology Development	2	24.306	23.780	16.344	0.000	16.344	16.492	16.174	16.498	16.829
9	0605023	Integrated Electronic Health Record (iEHR)	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0605025	Theater Medical Information Program - Joint (TMIP-J)	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0605026	Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)	2	27.293	14.478	18.336	0.000	18.336	15.751	6.012	6.132	0.000
12	0605039	DoD Medical Information Exchange and Interoperability	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0605045	Joint Operational Medicine Information System (JOMIS)	2	49.084	41.902	0.000	0.000	0.000	0.000	0	0	0
14	0605145	Medical Products and Support Systems Development	2	24.921	21.589	21.068	0.000	21.068	21.489	21.919	22.357	22.804
15	0605502	Small Business Innovation Research (SBIR) Program	2	66.784	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0606105	Medical Program-Wide Activities	2	70.610	69.219	48.672	0.000	48.672	49.645	50.638	51.651	52.692
17	0607100	Medical Products and Capabilities Enhancement Activities	2	15.140	16.819	17.215	0.000	17.215	17.619	17.971	18.330	18.697
18	0608045	Software and Digital Technology Pilot Program	8	0.000	0.000	160.428	0.000	160.428	163.542	166.811	273.426	278.893
		Total Budget Activities 2 and 8		**2,153.421**	**2,306.095**	**722.893**	**0.000**	**722.893**	**746.900**	**751.454**	**870.080**	**881.568**

Notes:
1. FY 2019 actuals includes congressional additions, reductions, and statutory reductions for FFRDC/SBIR/STTR.
2. FY 2020 reflects the enacted FY 2020 President's Budget.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0601101DHA *I In-House Laboratory Independent Research (ILIR)*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	20.420	3.552	4.013	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
010A: *CSI - Congressional Special Interests*	1.315	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
240A: *Infectious Disease (USUHS)*	2.630	0.480	0.490	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
240B: *Military Operational Medicine (USUHS)*	7.869	1.479	1.509	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
240C: *Combat Casualty Care (USUHS)*	8.356	1.593	2.014	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
468: *Metabolomics, Exposure Biomarkers, and Health Outcomes (USUHS)*	0.250	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

Funds were adjusted to higher priority programs in FY 2021-2025.

A. Mission Description and Budget Item Justification

For the Uniformed Services of the Health Sciences (USUHS), this program element supports basic medical research at the Uniformed Services University of the Health Sciences (USUHS). It facilitates the recruitment and retention of faculty; supports unique research training for military medical students and resident fellows; and allows the University's faculty researchers to collect pilot data towards military relevant medical research projects in order to secure research funds from extramural sources (estimated $180 million annually). Approximately 48 intramural research projects are active each year, including 18 faculty start-ups. Projects are funded on a peer-reviewed, competitive basis. Results from these studies contribute to the knowledge base intended to enable technical approaches and investment strategies within Defense Science and Technology (S&T) programs. USU enriches the training of the next generation of physicians/scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system.

The ILIR program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of Combat Casualty Care, Infectious Diseases, Military Operational Medicine, and Chemical, Biological, and Radiologic Defense. The portfolio of research projects will vary annually because this research is investigator-initiated. Examples of typical research efforts are detailed in R-2a.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency					Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program* / BA 2: *RDT&E*		R-1 Program Element (Number/Name) PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*			
B. Program Change Summary ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	3.687	4.013	0.000	-	0.000
Current President's Budget	3.552	4.013	0.000	-	0.000
Total Adjustments	-0.135	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.135	-			

Change Summary Explanation

FY 2021: Programmed effort and funding transferred to other higher priority programs.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	Project (Number/Name) 010A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
010A: *CSI - Congressional Special Interests*	1.315	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	Project (Number/Name) 240A / *Infectious Disease (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
240A: *Infectious Disease (USUHS)*	2.630	0.480	0.490	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services of the Health Sciences (USUHS), this program element supports basic medical research at the Uniformed Services University of the Health Sciences (USUHS). It facilitates the recruitment and retention of faculty; supports unique research training for military medical students and resident fellows; and allows the University's faculty researchers to collect pilot data towards military relevant medical research projects in order to secure research funds from extramural sources (estimated $180 million annually). Approximately 48 intramural research projects are active each year, including 18 faculty start-ups. Projects are funded on a peer-reviewed, competitive basis. Results from these studies contribute to the knowledge base intended to enable technical approaches and investment strategies within Defense Science and Technology (S&T) programs. USU enriches the training of the next generation of physicians/scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system.

The ILIR program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of Combat Casualty Care, Infectious Diseases, Military Operational Medicine, and Chemical, Biological, and Radiologic Defense. The portfolio of research projects will vary annually because this research is investigator-initiated. Examples of typical research efforts are detailed in R-2a.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Infectious Disease	0.480	0.490	0.000
Description: Immunology and molecular biology of bacterial, viral and parasitic disease threats to military operations. These threats include Bartonella bacilliformis, Clostridium difficile, Escherichia coli and their Shiga toxins, Henipaviruses (Hendra & Nipah), Cedar Virus, Hepatitis A, Helicobacter pylori, HIV, HTLV-1, Leishmaniasis, Litomosoides sigmodontis, Malaria, Neisseria gonorrhoeae, Shigella spp., Streptococcus, and Methicillin-resistant Staphylococcus aureus (MRSA). FY19 Accomplishments: The overall goal of this project is to develop a prototype histone deacetylase inhibitor (HDACi) called sulforaphane (SFN) as an epigenetic, adjunctive therapy for treatment of gonorrhea. We have completed the first aim to Identify SFN-induced effectors with activity against N. gonorrhoeae (Ng) by mass spectrometry, PCR-based arrays and mechanistic studies. A manuscript will be published soon. --We have solved the first quest of the proposed research, namely whether the seasonal H1N1 and H3N2 type A and a type B influenza virus (B/Lee strain) can infect a murine lung. Of note, though our humanized DRAGA mouse proposed to be established as an influenza mouse model for human influenza viruses lacks the murine immune system and it has a fully-functional human immune system, its lungs remain 95% of murine origin (5% represented by expression of CD36 human epithelial lung cells). It			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	**Project (Number/Name)** 240A / *Infectious Disease (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
was thus essential to carry out preliminary experiments to determine whether the murine lung (in our case, BALB/c mouse) can be infected with the seasonal influenza viruses mentioned above. Together, the BALB/c experiments demonstrate that (i) the murine lung (and thus expectedly the lungs of DRAGA mouse) can be infected with all the type A and B influenza viruses tested in the lab; (ii) a primary, non-lethal infection with H3N2 seasonal viruses can fully protect against a secondary infection with a highly infectious H1N1 virus. ***FY 2020 Plans:*** Efforts will continue within the Infectious Disease research area in FY 2020. Specific investigator-initiated projects compete for funding each year, usually with two to three-year project periods. Therefore, no detailed description of the research is possible at this time. ***FY 2021 Plans:*** Funds were adjusted to higher priority programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** As a result of directed RDT&E program reductions and reprioritization, ILIR PE 0601101 funding was eliminated.			
Accomplishments/Planned Programs Subtotals	0.480	0.490	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	Project (Number/Name) 240B / *Military Operational Medicine (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
240B: *Military Operational Medicine (USUHS)*	7.869	1.479	1.509	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services of the Health Sciences (USUHS), this program element supports basic medical research at the Uniformed Services University of the Health Sciences (USUHS). It facilitates the recruitment and retention of faculty; supports unique research training for military medical students and resident fellows; and allows the University's faculty researchers to collect pilot data towards military relevant medical research projects in order to secure research funds from extramural sources (estimated $180 million annually). Approximately 48 intramural research projects are active each year, including 18 faculty start-ups. Projects are funded on a peer-reviewed, competitive basis. Results from these studies contribute to the knowledge base intended to enable technical approaches and investment strategies within Defense Science and Technology (S&T) programs. USU enriches the training of the next generation of physicians/scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system.

The ILIR program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of Combat Casualty Care, Infectious Diseases, Military Operational Medicine, and Chemical, Biological, and Radiologic Defense. The portfolio of research projects will vary annually because this research is investigator-initiated. Examples of typical research efforts are detailed in R-2a.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Operational Medicine	1.479	1.509	0.000
Description: Sustainment of individual performance; mapping and managing deployment and operational stressors; cognitive enhancement; use of dietary and nutritional supplements and military and medical training readiness. FY19 Accomplishments: -- Developed a network within the MHS to systematically, efficiently and effectively manage and triage (from initial medical care to tertiary care) all patients presenting with ERi [i.e. EHi and/or ER] (project 1). The primary focus is on safe return to full duty. We also intend to determine the contribution of intrinsic and extrinsic risk factors associated with ERi, and create a scoring system to triage Service Members to early return to duty or further specialty evaluation for recurrence risk (project 2), and to develop genetic and biologic screening tools for ERi that can be deployed as far forward as possible with the ultimate goal of differentiating those at risk for recurrence and those who can be returned to full duty (project 3). While projects 1 and 2 are moving forward, patients are still referred for clinical workup through the current word of mouth process. Based on case history, some of the patients are offered enrollment in the genetic screening protocol of project 3. This protocol has been ongoing for several years and compares the genome of cases of exertional injuries with the markers of malignant hyperthermia (MH) susceptibility. During the project period, we have enrolled 8 index case individuals in project 3 of the study, and genetic analysis has been started.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	**Project (Number/Name)** 240B / *Military Operational Medicine (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
--Continued development of a self-test kit for rapid diagnosis of hygiene-related urogenital infections. Our comprehensive, MWRUHSQ survey questionnaire is being used to systematically evaluate the impact of varying water and sanitation resources on urogenital health and health behaviors in active duty service women (ADSW), and their views of the female urinary diversion device (FUDD) as a way to mitigate some challenges while in the field for the purpose of enhancing our understanding of ADSW's gender-specific health needs in austere environments. Preliminarily analyzed data collected from the initial 152 participants and we have submitted a data-based manuscript describing not only our psychometric characterization (to-date), but also our findings. -- Developed predictive models for female Marine officer performance at The Basic School (TBS), including musculoskeletal injury (MSK-I) & graduation outcomes. Enrolled 153 Female & 1217 Males from 7 training Companies (enrolled 80% of eligible Females; exceeded estimate of 120/yr). Completed post-testing on 4 Companies: Female grad rate 89% vs. 98% for Males in our cohort. Data analysis ongoing; injury & graduation outcomes being tracked. Four research abstracts presented at national conferences. -- Made significant progress in elucidating and validating the role of SREBP in mediating the effect of histone deacetylase inhibitors to increase KATP channel subunit expression. We now have convincing data that 1) correlates cellular cholesterol with SUR2 gene expression, 2) demonstrates cleavage and translocation of the SREBP transcription factor, and 3) selective SREPB-dependent activation of the SUR2 promoter. In addition, we have data implicating HDI-dependent decrease in cholesterol uptake pathways (LDL receptor) and marked increase in PCSK9 (an enzyme that promotes degradation of LDL receptor suggesting a mechanism by which histone deacetylase inhibitors cause a decrease in cellular cholesterol). Finally, dominant negative suppression of SREBP function inhibits the action of histone deacetylase inhibitors. ***FY 2020 Plans:*** Efforts will continue within the Military Operational Medicine research area in FY 2020. Specific investigator-initiated projects compete for funding each year, usually with two to three-year project periods. Therefore, no detailed description of the research is possible at this time. ***FY 2021 Plans:*** Funds were adjusted to higher priority programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** As a result of directed RDT&E program reductions and reprioritization, ILIR PE 0601101 funding was eliminated.			
Accomplishments/Planned Programs Subtotals	1.479	1.509	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	**Project (Number/Name)** 240B / *Military Operational Medicine (USUHS)*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	Project (Number/Name) 240C / *Combat Casualty Care (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
240C: *Combat Casualty Care (USUHS)*	8.356	1.593	2.014	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services of the Health Sciences (USUHS), this program element supports basic medical research at the Uniformed Services University of the Health Sciences (USUHS). It facilitates the recruitment and retention of faculty; supports unique research training for military medical students and resident fellows; and allows the University's faculty researchers to collect pilot data towards military relevant medical research projects in order to secure research funds from extramural sources (estimated $180 million annually). Approximately 48 intramural research projects are active each year, including 18 faculty start-ups. Projects are funded on a peer-reviewed, competitive basis. Results from these studies contribute to the knowledge base intended to enable technical approaches and investment strategies within Defense Science and Technology (S&T) programs. USU enriches the training of the next generation of physicians/scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system.

The ILIR program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of Combat Casualty Care, Infectious Diseases, Military Operational Medicine, and Chemical, Biological, and Radiologic Defense. The portfolio of research projects will vary annually because this research is investigator-initiated. Examples of typical research efforts are detailed in R-2a.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Combat Casualty Care	1.593	2.014	0.000
Description: Regenerative medicine, rehabilitation, neurological, limb loss, pain management, readiness, resilience. FY19 Accomplishments: - sought to understand the mechanisms underlying cognitive deficits that are reported to affect non-native subjects following their prolonged stay and/or work at high altitude (HA). Found that exposure to hypobaric-hypoxia triggers maladaptive responses inducing cognitive deficits and suggests potential mechanisms underlying the adverse impacts of staying or traveling at high altitude. --Training in the WAVE requires large expenses of the environment to be modeled. We developed algorithms to automatically generate complex terrain and we have also developed algorithms that permit avatars to exhibit humanly plausible reactions to environmental stimuli. Stimuli regions of interest and danger. -- Analyzing both cross sectional and prospective data to evaluate acute and longer term health outcomes. As stated above, we are utilizing Cox Proportional Hazards Regressions to compare risk for various health outcomes between different exposure groups in our cohort of Coast Guard responders who were involved in the Deepwater Horizon response. We have been analyzing the long term health data from this study. Recently, we have focused mainly on the dermal and respiratory health systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	**Project (Number/Name)** 240C / *Combat Casualty Care (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Efforts will continue within the Combat Casualty Care research area in FY 2020. Specific investigator-initiated projects compete for funding each year, usually with two to three-year project periods. Therefore, no detailed description of the research is possible at this time. ***FY 2021 Plans:*** Funds were adjusted to higher priority programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** As a result of directed RDT&E program reductions and reprioritization, ILIR PE 0601101 funding was eliminated.			
Accomplishments/Planned Programs Subtotals	1.593	2.014	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601101DHA / *In-House Laboratory Independent Research (ILIR)*	Project (Number/Name) 468 / *Metabolomics, Exposure Biomarkers, and Health Outcomes (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
468: *Metabolomics, Exposure Biomarkers, and Health Outcomes (USUHS)*	0.250	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services of the Health Sciences (USUHS), this program element supports basic medical research at the Uniformed Services University of the Health Sciences (USUHS). It facilitates the recruitment and retention of faculty; supports unique research training for military medical students and resident fellows; and allows the University's faculty researchers to collect pilot data towards military relevant medical research projects in order to secure research funds from extramural sources (estimated $180 million annually). Approximately 48 intramural research projects are active each year, including 18 faculty start-ups. Projects are funded on a peer-reviewed, competitive basis. Results from these studies contribute to the knowledge base intended to enable technical approaches and investment strategies within Defense Science and Technology (S&T) programs. USU enriches the training of the next generation of physicians/scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system.

The ILIR program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of Combat Casualty Care, Infectious Diseases, Military Operational Medicine, and Chemical, Biological, and Radiologic Defense. The portfolio of research projects will vary annually because this research is investigator-initiated. Examples of typical research efforts are detailed in R-2a.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0601117DHA *I Basic Operational Medical Research Sciences*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	43.790	8.400	17.408	8.913	-	8.913	9.091	9.273	9.458	9.647	Continuing	Continuing
100A: *CSI - Congressional Special Interests*	8.349	0.982	8.800	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
371: *GDF - Basic Operational Medical Research Science*	35.441	7.418	8.608	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
371A: *GDF - BOMRS (Combat Casualty Care)*	-	0.000	0.000	1.304	-	1.304	1.328	1.356	1.381	1.409	Continuing	Continuing
371B: *GDF - BOMRS (Military Operational Medicine)*	-	0.000	0.000	5.498	-	5.498	5.609	5.720	5.836	5.953	Continuing	Continuing
371C: *GDF - BOMRS (Medical Simulation & Training/Health Informatics)*	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
371D: *GDF - BOMRS (Clinical and Rehabilitation Medicine)*	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
371E: *GDF - BOMRS (Military Infectious Disease)*	-	0.000	0.000	2.111	-	2.111	2.154	2.197	2.241	2.285	Continuing	Continuing
371F: *GDF - BOMRS (Radiological Health Effects)*	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force-Basic Medical Research Sciences: This program element (PE) provides support for basic medical research directed toward greater knowledge and understanding of the fundamental principles of science and medicine that are relevant to the improvement of Force Health. Research in this PE is designed to address areas of interest to the Secretary of Defense regarding Wounded Warriors, capabilities identified through the Joint Capabilities Integration and Development System, and sustainment of DoD and multi-agency priority investments in science, technology, research, and development. Medical research, development, test, and evaluation (RDT&E) priorities for the Defense Health Program (DHP) are guided by, and will support, the Quadrennial Defense Review, the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, and Military Families, the National Strategy for Combating Antibiotic Resistance, and the National Strategy for Biosurveillance.

Research will support efforts such as the Precision Medicine Initiative which seeks to increase the use of big data and interdisciplinary approaches to establish a fundamental understanding of military disease and injury to advance health status assessment, diagnosis, and treatment tailored to individual Service members and beneficiaries, research focused on protection against emerging infectious disease threats, the advancement of state of the art regenerative medicine manufacturing technologies consistent with the National Strategic Plan for Advanced Manufacturing, the advancement of global health engagement and capitalization of

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0601117DHA *I Basic Operational Medical Research Sciences*

complementary research and technology capabilities, improving deployment military occupational and environmental exposure monitoring, and the strengthening of the scientific basis for decision-making in patient safety and quality performance in the Military Health System. The program also supports the Interagency Strategic Plan for Research and Development of Blood Products and Related Technologies for Trauma Care and Emergency Preparedness. Program development and execution is peer-reviewed and coordinated with all of the Military Services, appropriate Defense agencies or activities and other federal agencies, to include the Department of Veterans Affairs, the Department of Health and Human Services, and the Department of Homeland Security. Funds in this PE are for basic research that promises to provide important new approaches to complex military medical problems. As the research efforts mature, the most promising efforts will transition to applied research (PE 0602115) or technology development (PE 0603115) funding.

In FY 2016, Congressional Special Interest (CSI) funds were provided for Core Research Funding. Because of the CSI annual structure, out-year funding is not programmed.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	8.699	8.608	8.913	-	8.913
Current President's Budget	8.400	17.408	8.913	-	8.913
Total Adjustments	-0.299	8.800	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.800			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.299	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 100A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
100A: *CSI - Congressional Special Interests*	8.349	0.982	8.800	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY2019, the DHP funded $982K in CSI Restoral directed research.

In FY 2018, the DHP funded CSI directed research. The strategy for the FY 2018 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: CSI - Restoral	0.982	8.800	-
Description: CSI Restoral for directed research in GDF - Basic Medical Research Sciences: This program element (PE) provides support for basic medical research directed toward greater knowledge and understanding of the fundamental principles of science and medicine that are relevant to the improvement of Force Health. ***FY 2020 Plans:*** In FY2020, the DHP funded $8,800K in CSI Restoral directed research. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	0.982	8.800	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0601117DHA / *Basic Operational Medical Research Sciences*	**Project (Number/Name)** 371 / *GDF - Basic Operational Medical Research Science*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371: *GDF - Basic Operational Medical Research Science*	35.441	7.418	8.608	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Basic research described here focuses on enhancement of knowledge to support capabilities identified through the Joint Capabilities Integration and Development System process and sustainment of DoD and multi-agency priority investments in science, technology, research, and development as stated in the Quadrennial Defense Review, the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, and Military Families, and the National Strategy for Combating Antibiotic Resistance. This project supports basic research managed by the Joint Program Committees (JPCs) in the following areas: 1- Military Infectious Diseases basic research develops protection and treatment products for military relevant infectious diseases. 2- Military Operational Medicine basic research focuses on the development of medical countermeasures against operational stressors, prevention of physical and psychological injuries during training and operations, and maximizing the health, performance and fitness of Service members. 3- Combat Casualty Care basic research focuses on optimizing survival and recovery in injured Service members across the spectrum of care from point of injury through en route and facility care.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Project 371 GDF – Basic Operational Medical Research Sciences	7.418	8.608	0.000
Description: Provide support for basic medical research directed toward attaining greater knowledge and understanding of fundamental principles of science and medicine relevant to the improvement of medical care in operationally relevant environments.			
FY 2020 Plans: Military infectious diseases research continues to support multi-year basic research studies in bacterial diseases for the prevention, treatment and management in discovery and development of antibacterial agents for biofilms and multi-drug resistant organisms (MDROs), detection of MDROs, and biomarkers. Successful approaches are being selected for funding. Studies that address the remaining gaps related to infection caused by MDROs are ongoing. These studies support the National Action Plan for Combating Antibiotic-Resistant Bacteria. Military operational medicine research will continue to characterize the biomechanical responses of brain tissue to blast waves and indirect mechanisms of blast wave-induced injury in animal models that will guide the development of interventions for mitigating blast-induced brain injury. Conducting research to define the role of individual and unit climate factors on aggression. Identifying linkages between identified genetic markers and individual performance or health risks. Conducting studies to understand the basic mechanisms underlying psychological resilience to inform potential future intervention and assessment work. Conducting epidemiological studies to identify the nature of the substance abuse problem in the military and possible unique contributing and protective factors. Identifying candidate targets and neurological systems for treatment and diagnostic indicators			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0601117DHA / *Basic Operational Medical Research Sciences*	**Project (Number/Name)** 371 / *GDF - Basic Operational Medical Research Science*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
of post-traumatic stress disorder (PTSD). Defining solutions to prevent, mitigate and/or recover from fatigue via electrical brain stimulation. Identifying physical, physiological and psychosocial factors that may differentially impact the performance of female versus male Service members and gender-based susceptibility to musculoskeletal injury. Studying mechanisms of molecular changes in the brain following exposure to inhaled toxicants. Combat casualty care research is focusing on developing an understanding of trauma-associated pathophysiologic (functional changes associated with injury) mechanisms using advanced hemostatic and resuscitation approaches in prolonged field care scenarios when evacuation is delayed. ***FY 2021 Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned to PE 0601117DHA Project Codes 371A-F.			
Accomplishments/Planned Programs Subtotals	7.418	8.608	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 371A / *GDF - BOMRS (Combat Casualty Care)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371A: *GDF - BOMRS (Combat Casualty Care)*	-	0.000	0.000	1.304	-	1.304	1.328	1.356	1.381	1.409	Continuing	Continuing

A. Mission Description and Budget Item Justification

Basic research described here focuses on the enhancement of knowledge to support capabilities identified through the Joint Capabilities Integration Development System process and sustainment of DoD and multi-agency priority investments in science, technology, research and development as stated in the Quadrennial Defense Review, and the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service members, and Military Families.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Joint Battlefield Healthcare (Formerly Combat Casualty Care) ***Description:*** Joint Battlefield Healthcare activities are focused on developing and understanding of acute and long-term trauma-associated pathophysiology mechanisms to include advanced hemostatic and resuscitative approaches to prolonged field care, enroute care, wound healing and recovery, and neurotrauma. ***FY 2020 Plans:*** N/A ***FY 2021 Plans:*** Joint Battlefield Healthcare activities are focused on developing and understanding of acute and long-term trauma-associated pathophysiology mechanisms to include advanced hemostatic and resuscitative approaches to prolonged field care, enroute care, wound healing and recovery, and neurotrauma. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 371.	0.000	0.000	1.304
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.304

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 371B / *GDF - BOMRS (Military Operational Medicine)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371B: *GDF - BOMRS (Military Operational Medicine)*	-	0.000	0.000	5.498	-	5.498	5.609	5.720	5.836	5.953	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct scientific studies and experimentation directed toward increasing fundamental knowledge and understanding to support the development of medical countermeasures against combat stressors, prevention of physical and psychological injuries and maximizing the health, performance and fitness of service members during training and from point of injury through role of care four.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Health and Recovery (Formerly Military Operational Medicine)	-	-	5.498
Description: Efforts include injury prevention and recovery, optimized cognition and fatigue management, physiological health and resilience, and performance in extreme environments. Activities will continue to focus on: injury prevention and recovery related to blunt, blast, and accelerative injuries; injury prevention and recovery related to musculoskeletal injury; performance nutrition and weight balance; operational systems toxicology for environmental health hazards; and, fatigue, cognitive health and performance. ***FY 2021 Plans:*** Efforts include injury prevention and recovery, optimized cognition and fatigue management, physiological health and resilience, and performance in extreme environments. Activities will continue to focus on: injury prevention and recovery related to blunt, blast, and accelerative injuries; injury prevention and recovery related to musculoskeletal injury; performance nutrition and weight balance; operational systems toxicology for environmental health hazards; and, fatigue, cognitive health and performance. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 371.			
Accomplishments/Planned Programs Subtotals	-	-	5.498

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 371C / *GDF - BOMRS (Medical Simulation & Training/Health Informatics)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371C: *GDF - BOMRS (Medical Simulation & Training/Health Informatics)*	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

N/A

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Simulation Technologies (Formerly Medical Simulation Technologies & Training/Health Informatics) ***Description:*** N/A ***FY 2021 Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 371.	-	-	0.000
Accomplishments/Planned Programs Subtotals	-	-	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 371D / *GDF - BOMRS (Clinical and Rehabilitation Medicine)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371D: *GDF - BOMRS (Clinical and Rehabilitation Medicine)*	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

N/A

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Clinical and Rehabilitation Medicine ***Description:*** N/A ***FY 2021 Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 371.	-	-	0.000
Accomplishments/Planned Programs Subtotals	-	-	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 371E / *GDF - BOMRS (Military Infectious Disease)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371E: *GDF - BOMRS (Military Infectious Disease)*	-	0.000	0.000	2.111	-	2.111	2.154	2.197	2.241	2.285	Continuing	Continuing

A. Mission Description and Budget Item Justification

Basic research focused on the development of products for the prevention and treatment of military relevant infectious diseases.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Infectious Disease	-	-	2.111
Description: Military infectious diseases activities continue to support studies in bacterial diseases for the prevention and treatment of infections with multidrug-resistant (MDR) bacterial pathogens. In addition, to responding to emerging infectious diseases and acute respiratory diseases. ***FY 2021 Plans:*** Military infectious diseases activities continue to support studies in bacterial diseases for the prevention and treatment of infections with multidrug-resistant (MDR) bacterial pathogens. In addition, to responding to emerging infectious diseases and acute respiratory diseases. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 371.			
Accomplishments/Planned Programs Subtotals	-	-	2.111

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0601117DHA / *Basic Operational Medical Research Sciences*	Project (Number/Name) 371F / *GDF - BOMRS (Radiological Health Effects)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
371F: *GDF - BOMRS (Radiological Health Effects)*	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

N/A

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Radiological Health Effects ***Description:*** N/A ***FY 2021 Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 371.	-	-	0.000
Accomplishments/Planned Programs Subtotals	-	-	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0602115DHA *I Applied Biomedical Technology*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	488.880	107.837	175.032	72.573	-	72.573	74.024	75.505	77.015	78.560	Continuing	Continuing
200A: *Congressional Special Interests*	148.090	38.026	92.149	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
246A: *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*	8.111	1.813	1.949	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
306B: *Advanced Diagnostics & Therapeutics Research & Development (AF)*	16.788	2.609	0.716	0.151	-	0.151	0.000	0.000	0.000	0.000	Continuing	Continuing
306C: *Core Adv Diagnostics & Epigenomics Applied Research (AF)*	1.728	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
306D: *Core Occupational, Bioenvironmental, Aerospace Medicine & Toxicology Applied Research (AF)*	1.728	0.000	3.416	4.064	-	4.064	4.299	4.385	4.473	4.567	Continuing	Continuing
447A: *Military HIV Research Program (Army)*	38.655	8.808	9.654	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372: *GDF - Applied Biomedical Technology*	273.780	56.581	67.148	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372A: *GDF - ABT (Combat Casualty Care)*	-	0.000	0.000	14.855	-	14.855	15.151	15.453	15.763	16.078	Continuing	Continuing
372B: *GDF - ABT (Military Operational Medicine)*	-	0.000	0.000	26.255	-	26.255	26.779	27.316	27.862	28.419	Continuing	Continuing
372C: *GDF - ABT (Medical Simulation & Training/Health Informatics)*	-	0.000	0.000	10.611	-	10.611	10.826	11.041	11.263	11.488	Continuing	Continuing
372D: *GDF - ABT (Clinical and Rehabilitation Medicine)*	-	0.000	0.000	7.064	-	7.064	7.204	7.350	7.495	7.645	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0602115DHA *I Applied Biomedical Technology*							
372E: *GDF - ABT (Military Infectious Disease)*	-	0.000	0.000	8.607	-	8.607	8.779	8.954	9.133	9.316	Continuing	Continuing
372F: *GDF - ABT (Radiological Health Effects)*	-	0.000	0.000	0.966	-	0.966	0.986	1.006	1.026	1.047	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) provides applied research funding to refine concepts and ideas into potential solutions for military health and performance problems, with a view toward evaluating technical feasibility. Research in this PE is designed to address areas of interest to the Secretary of Defense regarding Wounded Warriors, capabilities identified through the Joint Capabilities Integration and Development System, and sustainment of DoD and multi-agency priority investments in science, technology, research, and development. Medical research, development, test, and evaluation (RDT&E) priorities for the Defense Health Program (DHP) are guided by, and will support, the Quadrennial Defense Review, the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, and Military Families, the National Strategy for Combating Antibiotic Resistance, and the National Strategy for Biosurveillance.

Research will support efforts such as the Precision Medicine Initiative which seeks to increase the use of big data and interdisciplinary approaches to establish a fundamental understanding of military disease and injury to advance health status assessment, diagnosis, and treatment tailored to individual Service members and beneficiaries, translational research focused on protection against emerging infectious disease threats, the advancement of state of the art regenerative medicine manufacturing technologies consistent with the National Strategic Plan for Advanced Manufacturing, the advancement of global health engagement and capitalization of complementary research and technology capabilities, improving deployment military occupational and environmental exposure monitoring, and the strengthening of the scientific basis for decision-making in patient safety and quality performance in the Military Health System. The program also supports the Interagency Strategic Plan for Research & Development of Blood Products and Related Technologies for Trauma Care and Emergency Preparedness. Program development and execution is peer-reviewed and coordinated with all of the Military Services, appropriate Defense agencies or activities and other federal agencies, to include the Department of Veterans Affairs, the Department of Health and Human Services, and the Department of Homeland Security. Funds in the PE support studies and investigations leading to candidate solutions that may involve use of animal models for testing in preparation for initial human testing. As research efforts mature, the most promising efforts will transition to technology development (PE 0603115) funding.

For the Army Medical Command: This PE funds the military HIV research program to refine identification methods for determining genetic diversity of the virus, to conduct preclinical work in laboratory animals including non-human primates to identify candidates for global HIV-1 vaccine, and to evaluate and prepare overseas sites for clinical trials with these vaccine candidates. Funding is also provided to develop strategies to prevent, mitigate, and treat antibiotic resistant bacteria in wounds through the Combating Antibiotic Resistant Bacteria - WRAIR Discovery and Wound Program.

In FY 2016, Congressional Special Interest funds were provided for Traumatic Brain Injury and Psychological Health (TBI/PH) and Core Research Funding. Because of the CSI annual structure, out-year funding is not programmed.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency					Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program* / BA 2: *RDT&E*		R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*			
B. Program Change Summary ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	112.754	82.883	84.408	-	84.408
Current President's Budget	107.837	175.032	72.573	-	72.573
Total Adjustments	-4.917	92.149	-11.835	-	-11.835
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	92.149			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.917	-			
• Reprogrammings	-	-	-11.835	-	-11.835

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 200A: *Congressional Special Interests*		
Congressional Add: *PC426 – CSI - Peer Reviewed Traumatic Brian Injury / Psychological Health (TBI/PH) (PE 0602115) (Army)*	22.318	59.000
Congressional Add: *PC462A – CSI - GDF Restore Core Applied Biomedical Technology (PE 0602115) (GDF)*	15.708	33.149
Congressional Add Subtotals for Project: 200A	38.026	92.149
Congressional Add Totals for all Projects	38.026	92.149

Change Summary Explanation

FY 2021: Programmed effort and funding transferred to the Department of the Army (PE 0602115A Project EB2) as part of the Readiness Transfer for FY 2021.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 200A / *Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
200A: *Congressional Special Interests*	148.090	38.026	92.149	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

In FY 2018, the Defense Health Program funded Congressional Special Interest (CSI) directed research. The strategy for the FY 2018 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: PC426 – CSI - Peer Reviewed Traumatic Brian Injury / Psychological Health (TBI/PH) (PE 0602115) (Army) ***FY 2019 Accomplishments:*** 426 – CSI - Peer Reviewed Traumatic Brian Injury / Psychological Health (TBI/PH) (PE 0602115) (Army) ***FY 2020 Plans:*** 426 – CSI - Peer Reviewed Traumatic Brian Injury / Psychological Health (TBI/PH) (PE 0602115) (Army)	22.318	59.000
Congressional Add: PC462A – CSI - GDF Restore Core Applied Biomedical Technology (PE 0602115) (GDF) ***FY 2019 Accomplishments:*** PC462A – CSI - GDF Restore Core Applied Biomedical Technology (PE 0602115) (GDF) ***FY 2020 Plans:*** PC462A – CSI - GDF Restore Core Applied Biomedical Technology (PE 0602115) (GDF)	15.708	33.149
Congressional Adds Subtotals	38.026	92.149

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 246A / *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
246A: *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*	8.111	1.813	1.949	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

At the President's direction in late 2013, a National Strategy was created to address the critical issue of antimicrobial resistance. This strategy was devised using an interagency approach and ultimately approved at the executive level (2014). Inherent in this work are DoD sponsored efforts to support the DoD's beneficiaries, but also complement national efforts to prevent, detect, and control illness and death related to infections caused by antibiotic-resistant bacteria. One critical need identified is for new therapeutics, to include antibiotics. This effort's focus is on the development of new/novel antibiotics, especially those targeting the most resistant and worrisome Gram negative bacterial pathogens, using existing expertise at the Walter Reed Army Institute of Research (WRAIR), and leveraging other WRAIR capabilities to evaluate viable candidate targets for advanced discovery. This project supports (both directly and indirectly) Global Health Security Agenda priorities to respond rapidly and effectively to biological threats of international concern.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)	1.813	1.949	0.000
Description: Focus on continued establishment of in-house capabilities for an antibacterial drug discovery program directed toward military relevant drug-resistant bacteria that a) encompasses assessment of external products/candidates/leads that may meet DoD requirements, b) opens active intramural based discovery efforts of new potential products/candidates/leads for development, and c) fosters partnerships with external collaborators to develop/co-develop new potential antibacterial treatment therapeutics.			
FY 2020 Plans: CARB program continues its research efforts to evaluate viable small molecule candidate antibacterial agents for planned development for the DoD and Public Health benefit. In addition, the program continues its market analysis efforts of established, non-DoD antibiotic programs to identify other promising compounds that could potentially treat military relevant resistant bacteria, establishing partnership and intellectual property rights agreements where necessary. These promising compounds are screened against military relevant strains and biofilms (microorganisms in which cells stick to each other on a surface) in order to select compounds for continued development. Specifically designed novel drugs are then synthesized to support lead optimization efforts, exploiting established in vivo (living organism) model standards to treat military relevant resistant bacteria.			
FY 2021 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 246A / *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Programmed effort and funding transferred to the Department of the Army (PE 0602115A Project EB2) as part of the Readiness Transfer for FY 2021. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	1.813	1.949	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

An Acquisition Strategy will be developed to support future Milestone B when a clinical development candidate is identified and reaches Technology Readiness Level (TRL)-6.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 306B / *Advanced Diagnostics & Therapeutics Research & Development (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
306B: *Advanced Diagnostics & Therapeutics Research & Development (AF)*	16.788	2.609	0.716	0.151	-	0.151	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Advanced Diagnostics & Therapeutics Clinical Translational Applied Research (Air Force): This project provides applied research funding needed to increase efficiency and efficacy of care across the spectrum of Advanced Diagnostics and Therapeutics requirements in the defined Modernization Thrust Areas to improve and enhance clinical Diagnosis, Identification, Quantification and Mitigation (DIQM) methods, techniques protocols, guidelines and practices for all DoD wounded, ill and/or injured beneficiaries. This project area seeks to manage and support research activities designed to facilitate the clinical integration of genomic-based medicine across the AFMS. Research in genomic medicine seeks to initiate the transition of genomic research discoveries into clinical practice, specifically applying knowledge derived from the study of pharmacogenomics, cancer genomics, gene-environment interactions, and inherited disease genomics in Airmen and beneficiaries. The program funds applied research which seeks to promote 'omic'-informed personalized medicine with an emphasis on targeted prevention, diagnosis, and treatment. The delivery of pro-active, evidence-based, personalized medicine will improve health in Warfighters and beneficiaries by providing care that is specific to the situation and patient, to include preventing disease or injury, early and accurate diagnosis, and selection of appropriate and effective treatment. Personalized medicine will reduce morbidity, mortality, mission impact of illness/injury, and healthcare costs while increasing health and wellness of the AF population and efficiency of the healthcare system. This applied research supports multiple focus areas, each of which represents an identified barrier/gap which must be addressed for successful implementation of 'omic-informed personalized medicine. Focus areas for applied research include knowledge generation research; ethical legal and social issues/policy research; bioinformatics research; educational research; research for development of advanced genomic diagnostic system. Plans are to utilize patient modeling algorithms to identify pharmacogenomics interventions that can improve patient health and reduce healthcare costs across the AFMS. Program aims to further conduct analysis in educational interventions for the proper use of genetic testing within the AFMS. Research for pharmacogenomics for anti-depressants and pain medication within the AFMS is also planned. Analysis of methodologies and challenges associated with the establishment of an AFMS genome data repository for future implementation of genomic medicine data is a key program component.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Advanced Diagnostics & Therapeutics Research & Development (AF)	2.609	0.716	0.151
Description: This project provides applied research funding needed to perform research in the area of diagnostic assay development/refinement for diseases of operational significance. This project area seeks to manage and support research activities designed to facilitate the clinical integration of genomic-based medicine across the AFMS. Research in genomic medicine seeks to initiate the transition of genomic research discoveries into clinical practice, specifically applying knowledge derived from the study of pharmacogenomics, cancer genomics, gene-environment interactions, and inherited disease genomics in Airmen and beneficiaries. The program funds seeks to promote 'omic'-informed personalized medicine with an emphasis on targeted prevention, diagnosis, and treatment. The delivery of pro-active, evidence-based, personalized medicine will improve			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306B / *Advanced Diagnostics & Therapeutics Research & Development (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
health in Warfighters and beneficiaries by providing care that is specific to the situation and patient, to include preventing disease or injury, early and accurate diagnosis, and selection of appropriate and effective treatment. Personalized medicine will reduce morbidity, mortality, mission impact of illness/injury, and healthcare costs while increasing health and wellness of the AF population and efficiency of the healthcare system. This applied research supports multiple focus areas, each of which represents an identified barrier/gap which must be addressed for successful implementation of 'omic-informed personalized medicine. Focus areas for applied research include knowledge generation research; ethical legal and social issues/policy research; bioinformatics research; educational research; research for development of advanced genomic diagnostic system. Analyze genomics survey data to identify gaps in genomic education, and development of educational programs to correct these gaps. Plans are to utilize patient modeling algorithms to identify pharmacogenomics interventions that can improve patient health and reduce healthcare costs across the AFMS. Program aims to further conduct analysis in educational interventions for the proper use of genetic testing within the AFMS. Research for pharmacogenomics for anti-depressants and pain medication within the AFMS is also planned. Analysis of methodologies and challenges associated with the establishment of an AFMS genome data repository for future implementation of genomic medicine is a key program component. ***FY 2020 Plans:*** Research will continue examining Mesenchymal Stem Cell (MSC)-derived exosomes as modulators of peripheral nerve regeneration and repair. Studies will continue evaluating portable Raman microscopy and surface-enhanced Raman scattering (SERS) technology for the rapid detection of microbial water contamination. Analyses will continue assessing mitigation strategies of radiofrequency-induced auditory dysfunction using a MSC-derived exosome-based approach. ***FY 2021 Plans:*** Mitigation strategies for radiofrequency-induced auditory dysfunction will be demonstrated using a MSC-derived exosome-based approach. FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding shifts over the FYDP into Project Code 306D- Core Occupational, Bioenvironmental, Aerospace Medicine & Toxicology Applied Research (AF) reflect deliberate focusing on future readiness mission.			
Accomplishments/Planned Programs Subtotals	2.609	0.716	0.151

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306B / *Advanced Diagnostics & Therapeutics Research & Development (AF)*

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc).

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 306C / *Core Adv Diagnostics & Epigenomics Applied Research (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
306C: *Core Adv Diagnostics & Epigenomics Applied Research (AF)*	1.728	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides applied research funding needed to perform research in the area of assay development/refinement for diseases of operational significance/ conditions. This will support increased efficiency and efficacy of care across the spectrum of Advanced Diagnostics and Therapeutics requirements in the defined Portfolio Areas. In addition, this project will support research for biosurveillance/occupational health activities and research/development of evidence based therapeutics

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306D / *Core Occupational, Bioenvironmental, Aerospace Medicine & Toxicology Applied Research (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
306D: *Core Occupational, Bioenvironmental, Aerospace Medicine & Toxicology Applied Research (AF)*	1.728	0.000	3.416	4.064	-	4.064	4.299	4.385	4.473	4.567	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supplies applied research funding needed to further develop approaches aimed at increasing the understanding of AF occupational and environmental hazards, advancing new concepts in developing methods of treatment in aeromedical care, and exploring new mechanisms to enhance human performance in critical Air Force occupations in the defined Modernization Thrust Areas to improve and enhance, maintain, preserve, and restore personnel performance, with the end goal of positively affecting personalized health and performance. Research will assess and analyze the diverse attributes of humans (cognitive, behavioral, physiological) and operational environments (chemical, physical, psychological, biological, radiological stressors) to drive optimal performance and care of our Airmen. Research will focus on identifying environmental hazards associated with unique AF environments, determine the risk of those hazards on AF operations and identify ways to mitigate those negative impacts. Research will investigate how the flight environment affects the processes of life, the ability to maintain homeostasis, the risk for injury or secondary insult, and seek to ameliorate these stressors to optimize Airman health, safety and performance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Core Occupational, Bioenvironmental, Aerospace Medicine & Toxicology Applied Research (AF)	0.000	3.416	4.064
Description: Define, develop, validate, and deliver attribute-linked solutions to better address the Force Generation readiness requirements of our Air Force by optimizing operator cognitive, behavioral, and physiological alignment to their mission, shaping medically-relevant screening, risk-assessment and retention criteria, improving operator and mission readiness through data driven risk analysis and mitigation actions, and promoting enhancements in the delivery of precision-based operational care. Identify and characterize environmental hazards associated with Air Force mission environments, determine the risk of those hazards on Air Force operations, and identify ways to mitigate those negative impacts. Conduct applied research investigating the negative effects of flight on health and safety to develop candidate technologies and knowledge to mitigate those effects and optimize mission readiness and warfighter return to duty.			
FY 2020 Plans: Evaluate current knowledge associated with sensory, psychological/behavioral, health status, physiologic and environmental attributes that show potential linkages to operational performance. Assess relevant environmental attributes and biomarkers that impact high performing Airmen. Identify operational characteristics associated for use in mapping attributes to operational performance. Characterize Aircrew physiologic response to high performance aircraft (HPA) flight stressors relevant to Unexplained Physiologic Events (UPE). Understand the exposure-based pathophysiology behind the high-rates of neck and back			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306D / *Core Occupational, Bioenvironmental, Aerospace Medicine & Toxicology Applied Research (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
pain and injury among Air Force operators and identify ameliorating solutions. Conduct Epidemiologic analysis of Fighter/Attack/ Trainer aircraft operator health issues. Identify emerging chemical contaminants in the aircraft environment control system/life support systems and the impact on operational performance. Study effects of single and multiple AE transport exposure on high-incidence rate clinical presentations. Investigate methods to optimize flight profiles to minimize oxygen and care requirements, improve patient post-flight outcomes and optimize warfighter return to duty. ***FY 2021 Plans:*** Continue to assess relevant environmental biomarkers that impact high performing Airmen. Continue to identify operational characteristics associated for use in mapping sensory, psychological/behavioral, health status, physiologic and environmental attributes to operational performance. Continue to characterize Aircrew physiologic response to flight stressors relevant to Unexplained Physiologic Events (UPE), acute and chronic accelerative force exposure risk assessment, and aerospace exposure. Continue identification of specific risk to contaminant exposure during flight with human testing. Continue to study effects of AE transport exposure on high-incidence rate clinical presentations. Investigate methods to optimize flight profiles to minimize oxygen and care requirements, improve patient post-flight outcomes and optimize warfighter return to duty. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding shifts over the FYDP from Project Code 306B- Advanced Diagnostics & Therapeutics Research & Development (AF) to reflect deliberate focusing on future readiness mission.			
Accomplishments/Planned Programs Subtotals	0.000	3.416	4.064

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 447A / *Military HIV Research Program (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
447A: *Military HIV Research Program (Army)*	38.655	8.808	9.654	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project conducts research on the human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS). This effort supports the Administration's priorities in the area of international scientific partnership in global health engagement. Work in this area includes refining improved identification methods to determine genetic diversity of the virus and evaluating and preparing overseas sites for clinical trials with global vaccine candidates. Additional activities include refining candidate vaccines for preventing HIV and undertaking preclinical studies (studies required before testing in humans) to assess vaccine for potential to protect and/or manage the disease in infected individuals. This project is jointly managed through an Interagency Agreement between U.S. Army Medical Research and Materiel Command (USAMRMC) and the National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health. This project contains no duplication of effort within the Military Departments or other government organizations. The cited work is also consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology focus areas, and supports the principal area of Military Relevant Infectious Diseases to include HIV.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military HIV Research Program	8.808	9.654	0.000
Description: This project conducts research on HIV, which causes AIDS. Work in this area includes refining improved identification methods to determine genetic diversity of the virus and evaluating and preparing overseas sites for future vaccine trials. Additional activities include refining candidate vaccines for preventing HIV and undertaking preclinical studies (studies required before testing in humans) to assess vaccine for potential to protect and/or manage the disease in infected individuals.			
FY 2020 Plans: The Military HIV Research Program is producing and characterizing new vaccine candidates for use in pre-clinical and clinical testing. Vaccine candidates will be evaluated to assess their ability to invoke an immune response in non-human primates by using novel delivery systems containing a diverse mixture of antigens (substance that induces an immune response) for HIV subtypes A, B, C, D and E. The program is developing and optimizing methods of large scale production of new vaccine candidates for testing in Africa and Asia to assess candidate vaccines against diverse HIV subtypes. Efforts to identify and develop new clinical trial sites in Europe, Southeast Africa Asia and the US are ongoing in order to allow scientists the opportunity to test future vaccine candidates against predominant HIV subtypes circulating around the world.			
FY 2021 Plans: Programmed effort and funding transferred to the Department of the Army (PE 0602115A Project EB2) as part of the Readiness Transfer for FY 2021.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 447A / *Military HIV Research Program (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	8.808	9.654	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

The program receives periodic funding from Division of AIDS of NIAID ranging from $10-20 million per year through an Interagency Agreement with USAMRMC.

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372 / *GDF - Applied Biomedical Technology*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372: *GDF - Applied Biomedical Technology*	273.780	56.581	67.148	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force - Applied Biomedical Technology: Applied biomedical technology research will focus on refining concepts and ideas into potential solutions for military problems and conducting analyses of alternatives to select the best potential solution for further advanced technology development. Applied research is managed by the Joint Program Committees in the following areas: 1- Medical Simulation and Information Sciences applied research is developing informatics-based simulated military medical training. 2- Military Infectious Diseases applied research is developing protection and treatment products for military relevant infectious diseases. 3- Military Operational Medicine applied research goals are to develop medical countermeasures against operational stressors, prevent musculoskeletal, neurosensory, and psychological injuries during training and operations, and to maximize health, performance and fitness of Service members. 4- Combat Casualty Care applied research is focused on optimizing survival and recovery in injured Service members across the spectrum of care from point of injury through en route and facility care. 5- Radiation Health Effects applied research supports tasks for the development of radiation medical countermeasures. 6- Clinical and Rehabilitative Medicine applied research is focused on efforts to reconstruct, rehabilitate, and provide care for injured Service members.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: GDF Applied Biomedical Technology	56.581	67.148	0.000
Description: Focus is on refining concepts and ideas into potential solutions to military problems and conducting analyses of alternatives to select the best potential solution for further advanced technology development. ***FY 2020 Plans:*** Medical simulation and information sciences applied research is focusing on researching pharmacodynamics (effects of drugs and the mechanism of their action) and pharmacokinetics (movement of drugs within the body) algorithms. This research supports a repository that contains simulated pharmaceuticals and other resuscitative treatments that are the most relevant to point of injury and en route care training. The mathematical algorithms development are focusing on specific pharmacodynamics (effects of drugs and the mechanism of their action.) and pharmacokinetics as well as absorption, distribution, metabolism, and excretion of the pharmaceuticals and resuscitative options. Research is being conducted on high fidelity tactile haptics (recreated sense of touch in simulated settings) to improve tactile sensation and resistance realism of virtual reality systems and mannequin based medical training systems. Military infectious diseases research continues to support multi-year studies in bacterial diseases research, and will down-select promising efforts for further development. Multi-year studies in wound infections are being supported to address critical research focus areas such as the ability to predict infection and better treatment options for infections with MDROs and development of biomarker assays for diagnosis of infection. Novel and innovative therapeutics and delivery technologies for combat wound			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372 / *GDF - Applied Biomedical Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
infections are being developed. Subject matter expertise in acute respiratory diseases is being maintained. These efforts support the National Action Plan for Combating Antibiotic-Resistant Bacteria. Scientific awareness and a capability to respond to emerging infectious diseases are being maintained. Partnerships with other entities are being supported to rapidly accelerate promising, innovative drug and vaccine solutions to combat emerging infectious diseases (e.g., Chikungunya, MERS, Zika). Military operational medicine research is collecting experimental data to validate whole-body computational models of the direct and indirect mechanism of blast brain injury. Research also focuses to determine optimal temporal spacing of repeated blast events to prevent cumulative effects and analyze changes in brain injury biomarkers. Additionally, research collecting impulse noise experimental data from volunteer subjects to validate computational models of inner ear injury. Research to inform refinements to comprehensive aircrew performance risk models of fatigue and hypoxia (oxygen deficiency) is ongoing. Efforts to refine models of dietary supplement use patterns by Armed Forces members and determining demographic and lifestyle factors associated with dietary supplement and caffeine use along with risks and benefits of consumption are progressing. Studies to assess the physical, psychosocial and physiological factors affecting overuse injury susceptibility and career success of female Warriors are advancing. Research is ongoing to inform prototype development for Service member and family resilience building interventions. Studies are progressing to deliver an evidence-based substance abuse prevention and training model and screening and compliance tools. Research aimed at developing an evidence-based approach to reduce stigma and a training program to increase provider skill in assessing and treating suicidality is in progress. In addition, novel and evidence-based PTSD interventions investigations are ongoing. Adaptations in delivery of care are being studied to achieve the goal of increased accessibility. Efforts to identify and developing candidate biomarker panels indicative of PTSD treatment-related improvement, and animal/human PTSD model development are progressing. Novel compounds and existing FDA-approved medications are being analyzed for potential use in treatment of PTSD. Candidate biomarkers of exposure to inhaled or ingested toxic substances are being evaluated for utility to establish the probability of adverse health risk outcomes and refine a non-invasive tool for diagnosing pulmonary diseases. Research focuses to refine metrics for optimized operational task performance in extreme environmental conditions. Combat casualty care hemorrhage research is investigating new diagnostic tools and continuing the development of treatments for severe hemorrhage following injury. Research is focusing on the pathophysiological impacts of using advanced hemorrhage control and resuscitation approaches in prolonged field care scenarios where evacuation may be delayed. Research is focusing on novel oxygen carriers for use in severe casualties where blood transfusions are not available. Inflammatory modulation and other research focused on the time period from 4 to 72 hours post-injury (related to prolonged field care scenarios) are ongoing. Tactical Combat Casualty Care (TCCC) is investigating novel approaches to enable field care of casualties when evacuation is delayed. Neurotrauma research is focusing on precision medicine capabilities. This research is anticipated to improve the characterization of traumatic brain injury (TBI), and lead to the development of targeted therapies, devices and clinical guidelines			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372 / *GDF - Applied Biomedical Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
to improve the care provided to TBI casualties. Treatments for extremity trauma to advance wound stabilization for prolonged field care scenarios that might enhance initial treatment and improve longer term outcomes are being studied. Closed loop and decision assist technologies for burns, lung ventilation, organ support, and other complex injuries to include maxillofacial injury are progressing. Pre-hospital Tactical Combat Casualty Care research is studying the effectiveness of acute lifesaving interventions and how to improve survival for those in need of critical care on the battlefield, in acute stages of injury, and for those requiring prolonged times until reaching definitive care in the prolonged field care/pre-hospital/hospital setting. En-route care research continues to study clinically-relevant testing standards for monitors in the transport environment and to develop new non-invasive monitoring technologies. Radiation health effects research will conduct non-clinical research to identify therapeutic candidates for acute radiation exposure and develop data to support preparation of technical data package requirements for investigational new drug applications. Research also focuses on evaluating candidate preventative radioprotectants (drugs) to determine their feasibility and practicality as candidate solutions to military needs. Objectives include identifying mechanisms of action, efficacy and safety data in animal models for medical countermeasures for Acute Radiation Syndrome (ARS). Clinical and rehabilitative medicine research is selecting the most promising candidate products to transition to technology development in the areas of neuromusculoskeletal injury, pain management, and regenerative medicine. Applied research in neuromusculoskeletal injuries to advance the diagnosis, treatment and rehabilitation outcomes after Service-related injuries is progressing. Targets for therapies to alleviate acute, chronic, and battlefield pain and identify strategies for addressing psychosocial aspects of pain management and pain-related substance abuse will be identified. Research to identify biomarkers to implement precision medicine approaches for pain management is ongoing. Regenerative medicine research is focusing efforts on developing solutions to repair, reconstruct or regenerate tissue lost or damaged due to traumatic injury. ***FY 2021 Plans:*** Efforts realigned to PE 06021115DHA Project Codes 372A-F. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned to PE 06021115DHA Project Codes 372A-F.			
Accomplishments/Planned Programs Subtotals	56.581	67.148	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372 / *GDF - Applied Biomedical Technology*

D. Acquisition Strategy

Evaluate technical feasibility of potential solutions to military health issues. Implement models into data or knowledge and test in a laboratory environment. Technology Transition and Milestone A packages will be developed to facilitate product transition.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372A / *GDF - ABT (Combat Casualty Care)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372A: *GDF - ABT (Combat Casualty Care)*	-	0.000	0.000	14.855	-	14.855	15.151	15.453	15.763	16.078	Continuing	Continuing

A. Mission Description and Budget Item Justification

Applied biomedical research will focus on refining concepts and ideas into potential solutions for military problems and conducting analysis of alternatives to select the best potential solutions for further advanced technology development. Joint battlefield healthcare applied research is focused on optimizing survivability and recovery in injured Service members across the spectrum of care from point of injury through enroute care and facility care.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Joint Battlefield Healthcare (Formerly Combat Casualty Care) ***Description:*** Joint Battlefield Healthcare applied research activities are focused on investigating new diagnostic tools and treatments for prolonged battlefield hemorrhage control, novel approaches for evaluation and treatment of neurotrauma, the role of precision medicine for care for wounded, burn and severe trauma treatments and long term care, and clinically relevant devices and processes related to evacuation and enroute care. ***FY 2020 Plans:*** N/A ***FY 2021 Plans:*** Joint Battlefield Healthcare applied research activities are focused on investigating new diagnostic tools and treatments for prolonged battlefield hemorrhage control, novel approaches for evaluation and treatment of neurotrauma, the role of precision medicine for care for wounded, burn and severe trauma treatments and long term care, and clinically relevant devices and processes related to evacuation and enroute care. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 372.	0.000	0.000	14.855
Accomplishments/Planned Programs Subtotals	0.000	0.000	14.855

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372A / *GDF - ABT (Combat Casualty Care)*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372B / *GDF - ABT (Military Operational Medicine)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372B: *GDF - ABT (Military Operational Medicine)*	-	0.000	0.000	26.255	-	26.255	26.779	27.316	27.862	28.419	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct studies and experimentation to meet a military medical need. Efforts are directed toward expanding and applying knowledge to develop or improve devices, systems, processes or methods that support medical countermeasures against operational stressors, or that prevent musculoskeletal, neurosensory, and psychological injuries during training and from point of injury through role of care four.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Health and Recovery (Formerly Military Operational Medicine)	0.000	0.000	26.255
Description: Studies, investigations, and non-system specific technology effort focus on: injury prevention and recovery; optimized cognition and fatigue management; psychological health and resilience; and performance in extreme environments. Activities will continue to focus on: injury prevention and recovery related to blunt, blast, and accelerative injuries; injury prevention and recovery related to musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; performance nutrition and weight balance; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; and optimization of psychological health and resilience. ***FY 2020 Plans:*** N/A ***FY 2021 Plans:*** Studies, investigations, and non-system specific technology effort focus on: injury prevention and recovery; optimized cognition and fatigue management; psychological health and resilience; and performance in extreme environments. Activities will continue to focus on: injury prevention and recovery related to blunt, blast, and accelerative injuries; injury prevention and recovery related to musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; performance nutrition and weight balance; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; and optimization of psychological health and resilience. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 372.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	26.255

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372B / *GDF - ABT (Military Operational Medicine)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372C / *GDF - ABT (Medical Simulation & Training/Health Informatics)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372C: *GDF - ABT (Medical Simulation & Training/Health Informatics)*	-	0.000	0.000	10.611	-	10.611	10.826	11.041	11.263	11.488	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct studies and experimentation to meet a military medical need. Efforts are directed toward expanding and applying knowledge to develop or improve devices, systems, processes or methods that support medical simulation to increase military medical personnel's knowledge, skills and abilities to deliver combat casualty care support to manage patient injury and illness and to conduct patient movement from point of injury through role of care four.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Simulation Technologies (Formerly Medical Simulation Technologies & Training/Health Informatics)	0.000	0.000	10.611

Description: Studies, investigations, and non-system specific technology efforts focused on tissue models, technologies that simulate medical condition progress over time, technologies that simulate injury, technologies that replicate warfighter bio-physiology, and, technologies that simulate high-fidelity combat casualty care scenarios. Activities will continue to focus on tissue models that accurately simulate the feel, pliability, flexibility, and responsiveness of live tissue; technologies that simulate the degradation or worsening of a medical condition over time, as well as simulate the improvement of a medical condition over time; technologies that simulate injury, especially hemorrhage, fractures, and ocular damage; technologies that accurately reflect warfighter bodily characteristics and are rugged enough to simulate patient care and movement throughout the entire continuum of care; technologies that simulate combat scenarios to provide realistic environments; and, technologies that simulate patient movement through the continuum of care.

FY 2020 Plans:
N/A

FY 2021 Plans:
Studies, investigations, and non-system specific technology efforts focused on tissue models, technologies that simulate medical condition progress over time, technologies that simulate injury, technologies that replicate warfighter bio-physiology, and, technologies that simulate high-fidelity combat casualty care scenarios. Activities will continue to focus on tissue models that accurately simulate the feel, pliability, flexibility, and responsiveness of live tissue; technologies that simulate the degradation or worsening of a medical condition over time, as well as simulate the improvement of a medical condition over time; technologies that simulate injury, especially hemorrhage, fractures, and ocular damage; technologies that accurately reflect warfighter bodily characteristics and are rugged enough to simulate patient care and movement throughout the entire continuum of care;

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372C / *GDF - ABT (Medical Simulation & Training/Health Informatics)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
technologies that simulate combat scenarios to provide realistic environments; and, technologies that simulate patient movement through the continuum of care. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 372.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	10.611

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372D / *GDF - ABT (Clinical and Rehabilitation Medicine)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372D: *GDF - ABT (Clinical and Rehabilitation Medicine)*	-	0.000	0.000	7.064	-	7.064	7.204	7.350	7.495	7.645	Continuing	Continuing

A. Mission Description and Budget Item Justification

Clinical and rehabilitative medicine activities for products to transition to technology development in the areas of neuromusculoskeletal injury, pain management, regenerative medicine, and sensory systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Clinical and Rehabilitation Medicine	0.000	0.000	7.064
Description: Applied research in neuromusculoskeletal injuries to advance the diagnosis, treatment and rehabilitation outcomes after Service-related injuries continues to progress. Targets for therapies to alleviate acute, chronic, and battlefield pain. Continue to focus efforts on developing solutions to repair, reconstruct or regenerate tissue lost or damaged due to traumatic injury, as well as, optimize restoration and rehabilitation of hearing and balance. ***FY 2020 Plans:*** N/A ***FY 2021 Plans:*** Applied research in neuromusculoskeletal injuries to advance the diagnosis, treatment and rehabilitation outcomes after Service-related injuries continues to progress. Targets for therapies to alleviate acute, chronic, and battlefield pain. Continue to focus efforts on developing solutions to repair, reconstruct or regenerate tissue lost or damaged due to traumatic injury, as well as, optimize restoration and rehabilitation of hearing and balance. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 372.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	7.064

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372E / *GDF - ABT (Military Infectious Disease)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372E: *GDF - ABT (Military Infectious Disease)*	-	0.000	0.000	8.607	-	8.607	8.779	8.954	9.133	9.316	Continuing	Continuing

A. Mission Description and Budget Item Justification

Military infectious diseases activities continue to support studies in bacterial diseases research, and will down-select promising efforts for further development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Infectious Disease	0.000	0.000	8.607
Description: Multi-year studies in wound infections continue to address the ability to predict infection and better treatment options for infections with multidrug-resistant (MDR) bacterial pathogens. Novel and innovative therapeutics and delivery technologies for combat wounds. ***FY 2020 Plans:*** N/A ***FY 2021 Plans:*** Multi-year studies in wound infections continue to address the ability to predict infection and better treatment options for infections with multidrug-resistant (MDR) bacterial pathogens. Novel and innovative therapeutics and delivery technologies for combat wounds. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 372.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	8.607

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372F / *GDF - ABT (Radiological Health Effects)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
372F: *GDF - ABT (Radiological Health Effects)*	-	0.000	0.000	0.966	-	0.966	0.986	1.006	1.026	1.047	Continuing	Continuing

A. Mission Description and Budget Item Justification

Support the discovery and development of medical capabilities to counter the threat of harmful radiation exposure. Research will be focused on countermeasures for acute radiation exposure leading toward identification of candidates for pre-exposure prophylaxis.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Radiological Health Effects	0.000	0.000	0.966
Description: Research will support discovery of one to two Medical Countermeasures (MCMs) candidates to development toward Technology Readiness Leve 6 (TRL-6) in support of transition to the advanced developer. In addition to identifying MCM candidates, this research will provide a fundamental understanding of the effects of radiation exposure. MCM identification will also be supported by the development and characterization on animal models to support FDA compliance, and also the identification and characterization of biomarkers to identify druggable targets and to support characterization of the mechanism of action of candidate MCMs			
FY 2020 Plans: N/A			
FY 2021 Plans: Research will support discovery of one to two Medical Countermeasures (MCMs) candidates to development toward Technology Readiness Leve 6 (TRL-6) in support of transition to the advanced developer. In addition to identifying MCM candidates, this research will provide a fundamental understanding of the effects of radiation exposure. MCM identification will also be supported by the development and characterization on animal models to support FDA compliance, and also the identification and characterization of biomarkers to identify druggable targets and to support characterization of the mechanism of action of candidate MCMs			
FY 2020 to FY 2021 Increase/Decrease Statement: Efforts realigned from Project Code 372.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.966

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372F / *GDF - ABT (Radiological Health Effects)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0602787DHA *I Medical Technology (AFRRI)*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	10.611	1.307	1.383	1.411	-	1.411	1.439	1.468	1.497	1.527	Continuing	Continuing
020: *CSI - Congressional Special Interests*	0.124	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
241A: *Biodosimetry (USUHS)*	2.151	0.277	0.283	0.289	-	0.289	0.295	0.301	0.307	0.313	Continuing	Continuing
241B: *Internal Contamination (USUHS)*	1.122	0.146	0.149	0.152	-	0.152	0.155	0.158	0.161	0.164	Continuing	Continuing
241C: *Radiation Countermeasures (USUHS)*	7.214	0.884	0.951	0.970	-	0.970	0.989	1.009	1.029	1.050	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services University of the Health Sciences (USUHS), Armed Forces Radiobiology Research Institute (AFRRI), this program supports developmental research to investigate new approaches that will lead to advancements in biomedical strategies for preventing, treating, assessing and predicting the health effects of human exposure to ionizing radiation. Program objectives focus on preventing or mitigating the health consequences from exposures to ionizing radiation that represent the highest probable threat to U.S. forces in current tactical, humanitarian and counterterrorism mission environments. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both short-and long-term risks of adverse health consequences. Advances in assessment, prognostication, and therapy in case of actual or suspected radiation exposures will enhance triage, treatment decisions and risk assessment in operational settings.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	1.356	1.383	1.411	-	1.411
Current President's Budget	1.307	1.383	1.411	-	1.411
Total Adjustments	-0.049	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.049	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602787DHA / *Medical Technology (AFRRI)*	Project (Number/Name) 020 / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
020: *CSI - Congressional Special Interests*	0.124	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The FY15 DHP Congressional Special Interest (CSI) funding is directed toward core research initiatives in Program Element (PE) 0602787 - Medical Technology (AFRRI). Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602787DHA / *Medical Technology (AFRRI)*	Project (Number/Name) 241A / *Biodosimetry (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
241A: *Biodosimetry (USUHS)*	2.151	0.277	0.283	0.289	-	0.289	0.295	0.301	0.307	0.313	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services University of the Health Sciences (USU), Armed Forces Radiobiology Research Institute (AFRRI), this program supports developmental research to investigate new approaches that will lead to advancements in biomedical strategies for preventing, treating, assessing and predicting the health effects of human exposure to ionizing radiation. Program objectives focus on preventing or mitigating the health consequences from exposures to ionizing radiation that represent the highest probable threat to U.S. forces in current tactical, humanitarian and counterterrorism mission environments. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both short-and long-term risks of adverse health consequences. Advances in assessment, prognostication, and therapy in case of actual or suspected radiation exposures will enhance triage, treatment decisions and risk assessment in operational settings.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Biodosimetry (USUHS)	0.277	0.283	0.289
Description: For the Uniformed Services University of the Health Sciences (USU), the mission and research objectives for biodosimetry are to assess radiation exposure by developing and providing biological and biophysical dosimetry capabilities for acute, protracted, and prior radiation exposures for all relevant military applications. FY 2019 Accomplishments: - Reported on a proteomic algorithm to predict hematological acute radiation syndrome (H-ARS) severity using a baboon radiation model; these findings support the utility of point-of-care proteomic devices to triage radiation casualties identifying individuals at risk of life-threatening exposures and requiring immediate medical treatment. -- Initiated studies to expose blood lymphocytes to LINAC electrons in lieu of fission neutrons. - Evaluated the utility of length ratio of chromosomes using automated scoring as an endpoint using the premature chromosome condensation (PCC) assay to rapidly assess the radiation dose and fraction of the body exposed. -- Continued efforts to apply centromeric sequence protein nucleic acid (PNA) probes to identify dicentric chromosomes using the PCC assay. -- Reported findings demonstrating differential effects of mixed-field (i.e., 5.5 neutrons to gamma rays) vs. gamma rays on hematology blood count changes following exposure to radiation. Established a consensus baboon radiation database using mixed field and gamma ray exposure for H-ARS severity. Developed an algorithm to predict H-ARS severity based on blood cell count changes, independent of whether exposures were from mixed-field or gamma rays only. These results support the concept to employ H-ARS severity assessment using blood cell counts to assess radiation exposure following nuclear incident. - Completed experimental studies on effects of low-to-moderate doses of gamma radiation on mouse hematopoietic system.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602787DHA / *Medical Technology (AFRRI)*	**Project (Number/Name)** 241A / *Biodosimetry (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
- Demonstrated that 0.5 Gy of total-body γ-irradiation (TBI) is a threshold dose for hematopoietic and immune system injury in CD2F1 mice. - Developed a novel method to measure radiation-induced DNA damage in cells using long range quantitative PCR. - Demonstrated that IL-18 is a useful radiation biomarker for radiation injury. ***FY 2020 Plans:*** - Establish a mouse partial-body irradiation model for combined hematological and proteomic biodosimetry approach following the mixed-field (neutrons and photons, high-LET) in addition to one already established and evaluated for a pure photon (60Co gamma-rays, low-LET) exposure. - Predict radiation dose absorbed by different organs by identifying and evaluating the organ-specific radiation injury biomarkers evaluated earlier in low-LET total-body irradiation studies and partial-body biodosimetry in mouse partial-body irradiation model. - Evaluate and identify the molecular targets and cellular “initiating events” after low-moderate doses of radiation exposure in multiple organs and tissues of mouse and human cells. - Explore further the mechanisms of low-moderate doses of radiation-mediated injury in experimental mice and human and mouse cells. - Explore the mechanisms by which low-moderate doses of gamma radiation-induced malignancy in radiosensitive tissues using mouse model and in vitro human and mouse cells. - Develop an accurate and sensitive method using long-range quantitative PCR method to determine DNA damage in human and animal blood cells after mixed-field (neutron and photons) radiation exposure, as well as to evaluate the efficacy of radiation countermeasures. -Investigate the mechanisms by which IL-18 induces vascular endothelium damage and multiple organ and cell injury in in vivo and ex vivo studies. -Enhance rapid dose and injury assessment using the biodosimetry suite of assays. -Analyze tissues collected from male and female mice exposed to either mixed field radiation or Co-60 radiation including different radiation doses and dose rates. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020 in addition to the following: -- Evaluate the use of the hematological algorithms using archived animal and human databases to provide prognostic diagnostic capability of radiation injury assessment. -- Compare various PCC endpoints for their utility to predict the fraction of the body exposed to radiation to determine those that could best provide rapid and accurate diagnostic information. - Evaluate utility of long range QPCR (LR-QPCR) and primer extension blockade enabled QPCR (PEBE-QPCR) to quantitatively measure radiation-induced DNA damage in mammalian cells			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602787DHA / *Medical Technology (AFRRI)*	**Project (Number/Name)** 241A / *Biodosimetry (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
- Develop IL-18 as a useful biomarker to monitor and track the lesions from radiation exposure and the efficacy of radiation-mitigation. - Investigate the mechanisms by which IL-18 signaling induces mouse tissue and cell injury after radiation and IL-18BP's mitigative effects. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	0.277	0.283	0.289

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

The program element 0602787DHA for AFRRI in addition to the three program elements: 0601115HPPE, 0602115HPPE, and 0603115HP are coordinated and integrated into the portfolio management by the Joint Program Committee-7/ Radiation Health Effects Research Program (RHERP).

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602787DHA / *Medical Technology (AFRRI)*	Project (Number/Name) 241B / *Internal Contamination (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
241B: *Internal Contamination (USUHS)*	1.122	0.146	0.149	0.152	-	0.152	0.155	0.158	0.161	0.164	Continuing	Continuing

A. Mission Description and Budget Item Justification

Internal Contamination (USU): For the Uniformed Services University of the Health Sciences (USU), the mission and research objective for Internal Contamination is to determine whether the short-term and long-term radiological and toxicological risks of embedded metals warrant changes in the current combat and post-combat fragment removal policies for military personnel. Additionally, the biological effects of internalization of radioactive elements from Radiological Dispersal Devices (RDDs) and depleted uranium weapons, as well as therapeutic approaches to enhance the elimination of radionuclides from the body are being investigated.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Internal Contamination (USUHS)	0.146	0.149	0.152
Description: Radioactive material can enter the body by a variety of pathways including ingestion, inhalation, and wound contamination. While some internalized isotopes will be naturally eliminated from the body, many others are not. They remain immobile or are transported and deposited to other organs where they continually irradiate the surrounding tissue. This chronic internal radiation exposure can cause unrepairable cellular damage eventually leading to death. This Program uses innovative approaches to address this pressing health concern. FY 2019 Accomplishments: AFRRI/USUHS Report AFR-B5-3530: Molecularly Imprinted Polymers for Internal Radionuclide Decontamination. ***FY 2020 Plans:*** FY2020 plans include initiation of feasibility of incorporating non-toxic plant-based metal chelators into a dendrimeric structure for use as potential radionuclide decorporation agents. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020 in addition to the following: initiation of feasibility studies of incorporating non-toxic plant-based metal chelators into a dendrimeric structure for use as potential radionuclide decorporation agents. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	0.146	0.149	0.152

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602787DHA / *Medical Technology (AFRRI)*	**Project (Number/Name)** 241B / *Internal Contamination (USUHS)*

C. Other Program Funding Summary ($ in Millions)

Remarks

The program element 0602787DHA for AFRRI in addition to the three program elements: 0601115HPPE, 0602115HPPE, and 0603115HP are coordinated and integrated into the portfolio management by the Joint Program Committee-7/ Radiation Health Effects Research Program (RHERP).

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602787DHA / *Medical Technology (AFRRI)*	Project (Number/Name) 241C / *Radiation Countermeasures (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
241C: *Radiation Countermeasures (USUHS)*	7.214	0.884	0.951	0.970	-	0.970	0.989	1.009	1.029	1.050	Continuing	Continuing

A. Mission Description and Budget Item Justification

Radiation Countermeasures (USU): For the Uniformed Services University of the Health Sciences (USU), this program supports developmental, mission directed research to investigate new concepts and approaches that will lead to advancements in biomedical strategies for preventing and treating the health effects of human exposure to ionizing radiation as well as radiation combined with injuries (burns, wounds, hemorrhage), termed combined injury (CI). Research ranges from exploration of biological processes likely to form the basis of technological solutions, to initial feasibility studies of promising solutions. Program objectives focus on preventing and mitigating the health consequences from exposures to ionizing radiation, in the context of probable threats to U.S. forces in current tactical, humanitarian and counterterrorism mission environments. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both short-and long-term risks of adverse health consequences.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Radiation Countermeasures (USUHS)	0.884	0.951	0.970
Description: For the Uniformed Services University of the Health Sciences (USU), this program supports developmental, mission directed research to investigate new concepts and approaches that will lead to advancements in biomedical strategies for preventing and treating the health effects of human exposure to ionizing radiation as well as radiation combined with injuries (burns, wounds, hemorrhage), termed combined injury (CI). Research ranges from exploration of biological processes likely to form the basis of technological solutions, to initial feasibility studies of promising solutions. Program objectives focus on preventing and mitigating the health consequences from exposures to ionizing radiation, in the context of probable threats to U.S. forces in current tactical, humanitarian and counterterrorism mission environments. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both short-and long-term risks of adverse health consequences. FY 2019 Accomplishments: - Reported translational research findings on Ghrelin therapy for mitigation of small intestine injury by sustaining granulocyte-colony stimulating factor (G-CSF), keratinocyte chemoattractant (KC) and macrophage inflammatory protein 1-alpha (MIP-1α), and decreased interleukin-18 (IL-18) in small intestine after combined radiation injury (CI). Ghrelin mitigating small intestinal injury induced by CI was confirmed by histology examination and reduction of cell death biomarker in small intestine. - Reported research findings on radiation injury (RI) and CI induced brain hemorrhage in cerebrum and cerebellum by reducing circulating platelets and brain energy production and increasing brain inflammation and cell death signals,			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602787DHA / *Medical Technology (AFRRI)*	**Project (Number/Name)** 241C / *Radiation Countermeasures (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
- Demonstrated in an animal model that combinational therapy of Ghrelin and Neulasta inhibited brain hemorrhage from RI and CI by recovering energy production, inhibiting inflammation, and blocking cell death signals in brain as well as increasing platelets in circulation. -Reported animal test/evaluation findings on radiation drug candidate, BBT-059, developed by Bolder Biotechnology, protected mice from radiation-induced gastro-intestinal injury, significantly increased serum citrulline, reduced inflammatory serum amyloid A (SAA) levels and bacterial translocation in liver and spleen. In addition, research findings showed that animals treated with BBT-059 survived up to 12 months post-radiation exposure from lethal and supra-lethal dose (delayed effects of acute radiation exposure, DEARE) with no histological changes in major organs including heart, kidney, brain, and liver. -Reported animal test/evaluation findings on radiation drug candidate, PLX-R18, developed by Pluristem Therapeutics, demonstrated significant increase in 30-day survival when it was administered two doses on day 1 pre and day 3 post-radiation. In addition, research findings showed that PLX-R18 protected mice from radiation induced hematopoietic acute radiation syndrome, significantly accelerated recovery of peripheral blood and bone marrow progenitor cells. - Completed animal test toxicity study of IL-18BP as a putative radiation drug and found no toxicity after subcutaneous (SC) injection from 0.25 mg/kg to 5.0 mg/kg to CD2F1 mice. - Demonstrated that a single injection of rhIL-18BP (1.5mg/kg) to mice at 24 h, 48 or 72 h post-total-body irradiation (TBI) exhibited a delayed mortality time in comparison with vehicle control-treated mice. In addition, IL-18BP (1.5 mg/kg, 48 h post-radiation) significantly increased bone marrow hematopoietic stem and progenitor cell clonogenicity and blood platelet number in mice after 9 or 10 Gy (LD70/30 and LD90/30) TBI. Also, two doses injection of rhIL-18BP (1.5mg/kg) to mice at 48 h and 5 days post-9 Gy TBI significantly increased 30-day survival of mice in compression of vehicle-control injected and irradiated mice. -Completed studies on the radiation-dependent effects on the human HSC proteome by in vitro methods; a few but promising radiation-induced protein biomarkers have been identified. -Generated additional translational information on radiation-induced biomarker signature using samples obtained from irradiated large animal model. This work is being done using transcriptomics and metabolomics/lipidomics platforms. -Successfully initiated a radiation induced microbiome study using irradiated murine model samples This work will continue by using bacterial DNA analysis as well as metabolomics/lipidomics. ***FY 2020 Plans:*** FY 2020 plans are: - Initiate a new proposed project to investigate molecular mechanisms underlying the differential responses to high-linear energy transfer (LET) radiation between males and females. - Examine and analyze organ injury in small intestine and bone marrow of mice exposed to mixed-field radiation. - Start proteomic analysis of 25 cytokines/chemokines and C3 in bone marrow, spleen and small intestine. - Assess pathological changes in major organs in one and six months post-total body radiation (TBI) in male and female C57BL/6 mice.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602787DHA / *Medical Technology (AFRRI)*	**Project (Number/Name)** 241C / *Radiation Countermeasures (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
- Continue to evaluate radiation-induced biomarker signature using large animal model samples and state of the art techniques: transcriptomics, metabolomics/lipidomics. - Continue to evaluate radiation induced microbiome using irradiated murine model samples. This will be done using transcriptomics and metabolomics/lipidomics platforms. - Establish Gut-on-chip model to minimize the use of animals in radiation biology research. ***FY 2021 Plans:*** FY2021 plans continue efforts as outlined in FY2020 in addition to the following: - Further investigate radiation effects on the molecular pathway of AKT-MAPK cross talk. - Evaluate long-term differential expression of micro-RNAs in C57BL/6 mice (male and female) and mini-pig after radiation. - Determine the DEARE (delayed effects of acute radiation exposure) effects on the gut microbiome compositions and host-microbiome relationship and identify gender differences. - Evaluate the pharmacokinetic of IL-18BP in mouse. - Evaluate the radiation mitigative effects of IL-18BP in different mouse model. - Determine the dose reduction factor (DRF) of IL-18BP in irradiated mice. - Evaluate the effects and mechanisms of IL-18BP on survival of mouse gastrointestinal systems after lethal doses of TBI. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	0.884	0.951	0.970

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

The program element 0602787DHA for AFRRI in addition to the three program elements: 0601115HPPE, 0602115HPPE, and 0603115HP are coordinated and integrated into the portfolio management by the Joint Program Committee-7/ Radiation Health Effects Research Program (RHERP).

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0603002DHA *I Medical Advanced Technology (AFRRI)*

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	2.460	0.325	0.345	0.352	-	0.352	0.359	0.366	0.373	0.380	Continuing	Continuing
030A: *CSI - Congressional Special Interests*	0.031	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
242A: *Biodosimetry (USUHS)*	1.453	0.195	0.206	0.210	-	0.210	0.214	0.218	0.222	0.226	Continuing	Continuing
242B: *Radiation Countermeasures (USUHS)*	0.976	0.130	0.139	0.142	-	0.142	0.145	0.148	0.151	0.154	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services University of the Health Sciences/ Armed Forces Radiobiology Research Institute (USUHS/AFRRI), this program supports applied research for advanced development of biomedical strategies to prevent, treat and assess health consequences from exposure to ionizing radiation. It capitalizes on findings under PE 0602787HP, Medical Technology, and from industry and academia to advance novel medical countermeasures into and through pre-clinical studies toward newly licensed products. Program objectives focus on mitigating the health consequences from exposures to ionizing radiation(alone or in combination with other injuries) that represent the highest probable threat to US forces in current tactical, humanitarian and counterterrorism mission environments. Findings from basic and developmental research are integrated into focused advanced technology development studies to produce the following: (1) protective and therapeutic strategies; (2) novel biological markers and delivery platforms for rapid, field-based individual medical assessment; and (3) experimental data needed to build accurate models for predicting casualties from complex injuries involving radiation and other battlefield insults. The AFRRI, because of its multidisciplinary staff and exceptional laboratory and radiation facilities, is uniquely positioned to execute the program as prescribed by its mission.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.338	0.345	0.352	-	0.352
Current President's Budget	0.325	0.345	0.352	-	0.352
Total Adjustments	-0.013	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.013	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603002DHA / *Medical Advanced Technology (AFRRI)*	Project (Number/Name) 030A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
030A: *CSI - Congressional Special Interests*	0.031	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603002DHA / *Medical Advanced Technology (AFRRI)*	**Project (Number/Name)** 242A / *Biodosimetry (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
242A: *Biodosimetry (USUHS)*	1.453	0.195	0.206	0.210	-	0.210	0.214	0.218	0.222	0.226	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Uniformed Services University of the Health Sciences/Armed Forces Radiobiology Research Institute (USU/AFRRI), this program supports applied research for advanced development of biomedical strategies to prevent, treat and assess health consequences from exposure to ionizing radiation. It capitalizes on findings under PE 0602787HP, Medical Technology, and from industry and academia to advance novel medical countermeasures into and through pre-clinical studies toward newly licensed products. Program objectives focus on mitigating the health consequences from exposures to ionizing radiation (alone or in combination with other injuries) that represent the highest probable threat to US forces in current tactical, humanitarian and counterterrorism mission environments. Findings from basic and developmental research are integrated into focused advanced technology development studies to produce the following: (1) protective and therapeutic strategies; (2) novel biological markers and delivery platforms for rapid, field-based individual medical assessment; and (3) experimental data needed to build accurate models for predicting casualties from complex injuries involving radiation and other battlefield insults. The AFRRI, because of its multidisciplinary staff and exceptional laboratory and radiation facilities, is uniquely positioned to execute the program as prescribed by its mission.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Biodosimetry (USUHS)	0.195	0.206	0.210
Description: Biodosimetry (USUHS): For the Uniformed Services University of the Health Sciences (USUHS), this program supports applied research for advanced development of biomedical and biophysical strategies to assess health consequences from exposure to ionizing radiation. It capitalizes on findings under PE 0602787HP, Medical Technology, and from industry and academia to advance novel biological markers and delivery platforms for rapid, field-based individual dose assessment and experimental data needed to build accurate models for predicting casualties from complex injuries involving radiation and other battlefield insults.			
FY 2019 Accomplishments: Attained major technical advances using “automated dicentrics scoring” to enhance radiation dose assessment to include: submission of technical publication reporting on the establishment of dose-response calibration curves following exposure to three different dose rates of 60Co gamma rays; established x-ray calibration curve (i.e., 250 kvP, 0.6 Gy/min); and automated dicentrics scoring performance evaluation using well-defined blind tests samples that showed an overall scoring of 103 ± 3.8 %, which justifies use of the automated dicentrics scoring in triage dose assessments. -Reported on findings from inter-laboratory exercise triage (n=50 spreads) dose assessments from AFRRI and institutional collaborator from Health Canada. Preliminary findings from this exercise (INTCO6-2018) showed accurate dose predictions within 0.6 Gy of the actual dose. These findings expand AFRRI’s verified dicentrics scorers and demonstrate laboratory competence,			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603002DHA / *Medical Advanced Technology (AFRRI)*	**Project (Number/Name)** 242A / *Biodosimetry (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
consistent with the guidance from the relevant (International Organization for Standardization) ISO standards. Results from AFRRI's 3-4 years' experience participating in the inter-comparison exercises with Health Canada is being written up for publication. Introduced a novel parameter, Hematological Index of Radiation Injury (HIRI), to distinguish individuals from exposure to <2 Gy vs. >2 Gy of radiation by a single CBC with differential in the early time period after a suspected exposure. Validated the HIRI algorithm using archived data from both an animal model (i.e., Macaque nonhuman primate exposed to 60Co gamma rays) and human radiation accidents. Filed an invention disclosure that was followed by the submission of a provisional patent application linking the HIRI algorithm with applications on hand-held and benchtop blood cell counters to aide first-response in triaging suspected individuals exposed to ionizing radiation. Reported research findings on MicroRNA 34a (MiR-34a) as applicable biomarker for increased expression in small intestine of mice that were exposed to mixed-field (neutrons+gamma) radiation. ***FY 2020 Plans:*** FY 2020 plans continue efforts to validate the use of multiple parameter biodosimetry assays for optimized radiation injury and dose assessment in addition to the following: Continue to develop and validate the HIRI algorithm for use in triaging suspected radiological casualties; sustain cytogenetic biodosimetry laboratory participation in inter-comparison exercises performing dose assessment to document laboratory proficiency; obtain dose-responses for automated scoring of dicentric yields in blood exposed to high-energy LINAC electrons; and continue efforts to obtain laboratory certification for radiation dose assessment using multiple biodosimetry assays. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020 in addition to the following: expand the validation of cytogenetic assays for dose assessment using the premature chromosome condensation (PCC) assay as a secondary endpoint for radiation dose and partial-body assessment; iInvestigate differential effects on organ injury such as bone marrow and small intestine between males and females after mixed-field and pure gamma radiation will be evaluated; and initiate 25 cytokine profile measurements for correlation with effects of radiation exposure. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	0.195	0.206	0.210

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603002DHA / *Medical Advanced Technology (AFRRI)*	**Project (Number/Name)** 242A / *Biodosimetry (USUHS)*

C. Other Program Funding Summary ($ in Millions)

Remarks

The program element 0602787DHA for AFRRI in addition to the three program elements: 0601115HPPE, 0602115HPPE, and 0603115HP are coordinated and integrated into the portfolio management by the Joint Program Committee-7/ Radiation Health Effects Research Program (RHERP).

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603002DHA / *Medical Advanced Technology (AFRRI)*	Project (Number/Name) 242B / *Radiation Countermeasures (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
242B: *Radiation Countermeasures (USUHS)*	0.976	0.130	0.139	0.142	-	0.142	0.145	0.148	0.151	0.154	Continuing	Continuing

A. Mission Description and Budget Item Justification

Radiation Countermeasures (USU): For the Uniformed Services University of the Health Sciences (USU), this program supports applied research for advanced development of biomedical strategies to prevent and treat health consequences from exposure to ionizing radiation. It capitalizes on findings under PE 0602787HP, Medical Technology, and from industry and academia to advance novel medical countermeasures into and through pre-clinical studies toward newly licensed products. Program objectives focus on preventing or mitigating the health consequences from exposures to ionizing radiation alone or in combination with other injuries, in the context of probable threats to US forces in current tactical, humanitarian and counterterrorism mission environments. Findings from basic and developmental research are integrated into highly focused advanced technology development studies yielding protective and therapeutic strategies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Radiation Countermeasures (USUHS)	0.130	0.139	0.142

Description: Radiation Countermeasures (USU): For the Uniformed Services University of the Health Sciences (USU), this program supports applied research for advanced development of biomedical strategies to prevent and treat health consequences from exposure to ionizing radiation. It capitalizes on findings under PE 0602787HP, Medical Technology, and from industry and academia to advance novel medical countermeasures into and through pre-clinical studies toward newly licensed products. Program objectives focus on preventing or mitigating the health consequences from exposures to ionizing radiation alone or in combination with other injuries, in the context of probable threats to US forces in current tactical, humanitarian and counterterrorism mission environments. Findings from basic and developmental research are integrated into highly focused advanced technology development studies yielding protective and therapeutic strategies.

FY 2019 Accomplishments:
- Demonstrated an important finding that radiation injury (RI) and combined radiation injury (CI) significantly reduced nuclear respiratory factor 1 and 2 (NRF1/2) and mitochondrial complexes I-V, thereby leading to decreases in energy production in mouse brain.
-Reported data on RI and CI decreased dynamin-related protein 1 (DRP1) and mitofusin 1 (Mfn1), resulting in mitochoondial remodeling in mouse brain. In addition, reported data showed RI and CI decreased AKT activation in mouse brain.
- Reported data on combinational therapy of Ghrelin and Neulasta recovered energy production by recovering NRF1/2, mitochondrial complex III, shape integrity and pro-survival signal molecules in mouse brain.

FY 2020 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603002DHA / *Medical Advanced Technology (AFRRI)*	**Project (Number/Name)** 242B / *Radiation Countermeasures (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
-FY 2020 plans are: continued gathering of preclinical data from animal models natural history studies for radiation toxicity and for the discovery and development of radiation countermeasures; conduct detailed analysis of the metabololomic and lipidomic studies with the samples collected in mice experiments with amifostine and a PARP inhibitor, Talazoparib; and determination of dose reduction factor (DRF) with optimal formulation dose with BMT-LIPO-GT3 and time in relation to irradiation, study of cytokine induction in unirradiated as well as irradiated mice, and hematopoietic recovery in animals exposed to radiation. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020 in addition to the following: Commence investigation of energy production in mouse small intestine exposed to high-LET radiation. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	0.130	0.139	0.142

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

The program element 0602787DHA for AFRRI in addition to the three program elements: 0601115HPPE, 0602115HPPE, and 0603115HP are coordinated and integrated into the portfolio management by the Joint Program Committee-7/ Radiation Health Effects Research Program (RHERP)

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0603115DHA *I Medical Technology Development*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	7,763.338	1,594.929	1,782.072	225.250	-	225.250	235.197	240.220	245.344	250.580	Continuing	Continuing
300A: *CSI - Congressional Special Interests*	6,018.979	1,328.026	1,502.651	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
238C: *Enroute Care Research & Development (Budgeted) (AF)*	23.121	8.237	9.391	11.250	-	11.250	12.675	12.866	13.122	13.387	Continuing	Continuing
238D: *Core Enroute Care R&D - Clinical Translational Focus (AF)*	0.997	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
238E: *Core Enroute Care R&D - Aerospace Medicine/Human Performance Focus (AF)*	0.997	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
243A: *Medical Development (Lab Support) (Navy)*	164.298	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
247A: *Elimination of Malaria in Southeast Asia (CARB) (Navy)*	5.812	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.812
247B: *Mitigate the Global Impact of Sepsis Through ACESO (CARB) (Navy)*	3.782	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.782
284B: *USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (Budgeted) (AF)*	19.043	7.300	8.576	10.418	-	10.418	11.122	11.471	11.700	11.934	Continuing	Continuing
284C: *Core Human Performance R&D - Clinical Translational Focus (AF)*	1.003	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
284D: *Core Human Performance R&D - Aerospace Medicine/ Human Performance Focus (AF)*	1.002	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
285A: *Operational Medicine Research & Development (Budgeted) (AF)*	25.807	4.082	4.089	0.232	-	0.232	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency										Date: February 2020		
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0603115DHA *I Medical Technology Development*							
285B: *Core Operational Medicine R&D - Clinical Translational Focus (AF)*	0.929	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
285C: *Core Operational Medicine R&D - Aerospace/ Human Performance Focus (AF)*	0.928	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
307B: *Force Health Protection, Advanced Diagnostics/ Therapeutics Research & Development (Budgeted) (AF)*	65.644	6.928	8.199	10.046	-	10.046	11.463	11.630	11.862	12.098	Continuing	Continuing
307C: *Core Force Health Protection R&D - Clinical Translational Focus (AF)*	0.545	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
307D: *Core Force Health Protection R&D - Aerospace Medicine/Human Performance Focus (AF)*	0.400	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
308B: *Expeditionary Medicine Research & Development (Budgeted) (AF)*	20.100	4.881	3.636	2.623	-	2.623	0.000	0.000	0.000	0.000	Continuing	Continuing
308C: *Core Expeditionary Medicine R&D - Clinical Translational Focus (AF)*	1.503	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
308D: *Core Expeditionary Medicine R&D - Aerospace/ Human Performance Focus (AF)*	1.502	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
309A: *Regenerative Medicine (USUHS)*	47.964	8.033	10.209	10.413	-	10.413	10.621	10.833	11.051	11.271	Continuing	Continuing
378A: *CoE-Breast Cancer Center of Excellence (Army)*	39.699	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
378B: *CoE-Breast Cancer Center of Excellence (USU)*	19.640	9.916	10.475	10.685	-	10.685	10.898	11.116	11.339	11.566	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency										Date: February 2020		
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0603115DHA *I Medical Technology Development*							
379A: *CoE-Gynecological Cancer Center of Excellence (Army)*	34.939	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
379B: *CoE-Gynecological Cancer Center of Excellence (USU)*	17.169	8.668	9.158	9.341	-	9.341	9.528	9.719	9.913	10.111	Continuing	Continuing
381A: *CoE-Integrative Cardiac Health Care Center of Excellence (Army)*	20.780	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
382A: *CoE-Pain Center of Excellence (Army)*	6.436	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
382B: *CoE-Pain Center of Excellence (USUHS)*	10.901	3.202	3.376	1.945	-	1.945	2.014	2.084	2.156	2.229	Continuing	Continuing
383A: *CoE-Prostate Cancer Center of Excellence (USUHS)*	49.072	7.921	8.359	8.526	-	8.526	8.696	8.870	9.047	9.228	Continuing	Continuing
398A: *CoE-Neuroscience Center of Excellence (USUHS)*	3.679	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
429A: *Hard Body Armor Testing (Army)*	1.356	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
431A: *Underbody Blast Testing (Army)*	48.611	10.800	9.200	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
448A: *Military HIV Research Program (Army)*	31.454	7.185	7.877	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
830A: *Deployed Warfighter Protection (Army)*	34.106	5.713	6.345	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
478: *Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)*	14.766	14.237	18.556	18.640	-	18.640	18.724	19.098	19.480	19.870	Continuing	Continuing
479: *Framingham Longitudinal Study (USUHS)*	4.920	4.746	4.920	4.920	-	4.920	4.920	5.018	5.118	5.220	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency										Date: February 2020		
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0603115DHA *I Medical Technology Development*							
499: *MHS Financial System Acquisition (DHA)*	15.222	20.358	15.373	1.971	-	1.971	6.011	6.051	6.092	6.143	Continuing	Continuing
381: *CoE - Integrative Cardiac Health Care (USUHS)*	0.000	2.811	3.118	1.680	-	1.680	1.744	1.809	1.875	1.943	Continuing	Continuing
504: *WRAIR Vaccine Production Facility Research (Army)*	0.000	8.000	8.152	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
506: *Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)*	0.000	0.000	11.904	11.141	-	11.141	11.385	11.631	11.883	12.141	Continuing	Continuing
507: *Brain Injury and Disease Prevention, Treatment and Research (USUHS)*	0.000	0.000	13.317	13.583	-	13.583	13.855	14.132	14.415	14.703	Continuing	Continuing
508: *Psychological Health and Resilience (USUHS)*	0.000	0.000	7.000	7.140	-	7.140	7.283	7.428	7.577	7.729	Continuing	Continuing
509: *Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)*	0.000	0.000	19.323	13.710	-	13.710	14.104	14.505	14.916	15.334	Continuing	Continuing
373: *GDF - Medical Technology Development*	1,006.232	123.885	78.868	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
373A: *GDF - MTD (Combat Casualty Care)*	-	0.000	0.000	11.168	-	11.168	15.736	16.756	19.649	20.114	Continuing	Continuing
373B: *GDF - MTD (Military Operational Medicine)*	-	0.000	0.000	23.255	-	23.255	19.046	19.116	18.151	18.557	Continuing	Continuing
373C: *GDF - MTD (Medical Simulation & Training/Health Informatics)*	-	0.000	0.000	12.613	-	12.613	13.044	13.339	13.637	13.942	Continuing	Continuing
373D: *GDF - MTD (Clinical and Rehabilitation Medicine)*	-	0.000	0.000	13.040	-	13.040	14.980	15.034	14.275	14.595	Continuing	Continuing
373E: *GDF - MTD (Military Infectious Disease)*	-	0.000	0.000	6.409	-	6.409	6.630	6.779	6.932	7.087	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
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373F: *GDF - MTD (Radiological Health Effects)*	-	0.000	0.000	0.501	-	0.501	0.518	0.531	0.542	0.554	Continuing	Continuing
373G: *GDF - MTD (Military Medical Photonics)*	-	0.000	0.000	10.000	-	10.000	10.200	10.404	10.612	10.824	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force - Medical Technology Development: This program element (PE) provides funding for promising candidate solutions that are selected for initial safety and effectiveness testing in animal studies and/or small scale human clinical trials regulated by the US Food and Drug Administration prior to licensing for human use. Research in this PE is designed to address areas of interest to the Secretary of Defense regarding Wounded Warriors, capabilities identified through the Joint Capabilities Integration and Development System, and sustainment of Department of Defense and multi-agency priority investments in science, technology, research, and development. Medical research, development, test, and evaluation priorities for the Defense Health Program (DHP) are guided by, and will support, the Quadrennial Defense Review, the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, and Military Families, the National Strategy for Combating Antibiotic Resistance, and the National Strategy for Biosurveillance.

Research will support efforts such as the Precision Medicine Initiative which seeks to increase the use of big data and interdisciplinary approaches to establish a fundamental understanding of military disease and injury to advance health status assessment, diagnosis, and treatment tailored to individual Service members and beneficiaries, translational research focused on protection against emerging infectious disease threats, the advancement of state of the art regenerative medicine manufacturing technologies consistent with the National Strategic Plan for Advanced Manufacturing, the advancement of global health engagement and capitalization of complementary research and technology capabilities, improving deployment military occupational and environmental exposure monitoring, and the strengthening of the scientific basis for decision-making in patient safety and quality performance in the Military Health System. The program also supports the Interagency Strategic Plan for Research & Development of Blood Products and Related Technologies for Trauma Care and Emergency Preparedness. Program development and execution is peer reviewed and coordinated with all of the Military Services, appropriate Defense agencies or activities and other federal agencies, to include the Department of Veterans Affairs, the Department of Health and Human Services, and the Department of Homeland Security. As research efforts mature, the most promising will transition to advanced concept development funding, PE 0604110. For knowledge products, successful findings will transition into clinical practice guidelines.

For the Army Medical Command -

The Underbody Blast (UBB) Testing medical research project provides funds to establish a scientific and statistical basis for evaluating skeletal injuries to vehicle occupants during ground vehicle UBB events. Areas of interest to the Secretary of Defense are medical research that provides an understanding of the human response and tolerance limits and injury mechanisms needed to accurately predict skeletal injuries to ground combat vehicle occupants caused by UBB events. This enhanced understanding will support the establishment of an improved capability to conduct Title 10 Live Fire Test and Evaluation and to make acquisition decisions.

The military human immunodeficiency virus (HIV) research project provides funds to develop candidate HIV vaccines, to assess their safety and effectiveness in human subjects, and to protect military personnel from risks associated with HIV infection.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
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The Armed Forces Pest Management Board Deployed Warfighter Protection program provides for the development of new or improved protection of military personnel from insects and tick vectors of disease pathogens.

Three Centers of Excellence (CoEs) receive medical technology development funds. Management of the Breast and Gynecological Cancer CoEs transfer from the Army to the Uniformed Services University beginning in FY 2017. The Cardiac Health CoE (Army) provides evidence-based personalized patient engagement approaches for comprehensive cardiac event prevention through education, outcomes research and technology tools, as well as molecular research to detect cardiovascular disease at an early stage to ultimately discover a signature for cardiovascular health, to find new genes that significantly increase risk for heart attack in Service members and other beneficiaries, and identify molecular markers of obesity and weight loss.

In FY 2017, Congressional Special Interest (CSI) funds were added to support peer-reviewed research programs: Amyotrophic Lateral Sclerosis (ALS), Autism, Bone Marrow Failure Disease, Ovarian Cancer, Multiple Sclerosis, Cancer, Lung Cancer, Orthopedic, Spinal Cord, Vision, Traumatic Brain Injury and Psychological Health (TBI/PH), Breast Cancer, Prostate Cancer, Gulf War Illness, Alcohol and Substance Use Disorders, Medical Research, Alzheimer's, Reconstructive Transplant, Tuberous Sclerosis Complex, Duchenne Muscular Dystrophy, Epilepsy, and Tick-borne diseases. CSI funds were also provided for Joint Warfighter Medical Research, Orthotics and Prosthetics Outcomes, Trauma Clinic Research, HIV/AIDS Program Increase, Global HIV/AIDS Prevention, and Core Research Funding. Because of the CSI annual structure, out-year funding is not programmed.

For the Navy Bureau of Medicine and Surgery, this program element includes funds for research management support costs. The Outside Continental US (OCONUS) laboratories conduct focused medical research on vaccine development for Malaria, Diarrhea Diseases, and Dengue Fever. In addition to entomology, HIV studies, surveillance and outbreak response under the Global Emerging Infections Surveillance (GEIS) program and risk assessment studies on a number of other infectious diseases that are present in the geographical regions where the laboratories are located. The CONUS laboratories conduct research on Military Operational Medicine, Combat Casualty Care, Diving and Submarine Medicine, Infectious Diseases, Environmental and Occupational Health, Directed Energy, and Aviation Medicine and Human Performance.

For the Air Force Medical Service (AFMS), medical research and development programs are divided into five primary thrust areas: En-Route care, Expeditionary Medicine, Operational Medicine (in-garrison care), Force Health Protection (FHP) (detect, prevent, threats), and Human Performance. Expeditionary Medicine is focused on care on the battlefield and in field hospitals prior to transporting patients out of theater to CONUS, and studies trauma resuscitation, hemorrhage control, and other life-saving interventions to keep critically wounded patients alive in the golden hour and to the next level of care. The AFMS is the only service transporting patients on long aeromedical evacuation missions. Therefore, the En-Route care thrust area studies include investigation on the impact of transport on patient and providers (including cabin altitude, noise, vibration, and environmental issues affecting physiology on the aircraft), patient safety factors during transport, medical technologies for use during transport, and research to support education and training with simulation for En-Route care providers. The Human Performance thrust area focuses on optimizing airmen physical and psychological performance, assessing the physical and cognitive demands on the operator (pilot/aircrew), facilitating a safe aviation environment through technology and equipment assessment, and improving/ sustaining airmen performance through training. Medical development and biomedical technology investments in FHP seek to deliver an improved FHP capability across the full spectrum of operations with research that prevents injury/ illness through improved identification and control of health risks. Under FHP, sub-project areas include Occupational Hazard Exposure (Includes Flight Hazards and Integrated Risk), Targeted Risk Identification, Mitigation and Treatment (Formerly Pathogen ID and Novel Therapeutics and includes Big Data), FHP Technologies Development and Assessment (Assay and disease detection), and Health Surveillance, Infection, Injury & Immunity. FHP also includes Innovations and Personalized

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
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Medicine. Operational medicine is focused on in garrison care – our next most critical issue post OIF/OEF – and how to care for the whole patient and consideration of comorbidities in treatment of wounded warriors and dependents.

For the Uniformed Services University of the Health Sciences (USUHS), medical development programs include the Prostate Cancer Center of Excellence (CoE), the Center for Neuroscience and Regenerative Medicine (CNRM), the Pain CoE, the Breast Cancer CoE, and the Gynecological Cancer CoE. The Prostate CoE, formerly a CSI, was chartered in 1992 to conduct basic, clinical, and translational research programs to combat diseases of the prostate. The Center's mission is fulfilled primarily through its three principal programs -- the Clinical Translational Research Center, the Basic Science Research Program, and the Tri-Service Multicenter Prostate Cancer Database, which encompasses its clinical research work with other participating military medical centers. These affiliated sites contribute data and biospecimens obtained from prostate cancer patients who participate in clinical trials. CNRM brings together the expertise of clinicians and scientists across disciplines to catalyze innovative approaches to TBI research. CNRM research programs emphasize aspects of high relevance to military populations, with a primary focus on patients at the Walter Reed National Military Medical Center. Beginning in FY17, the Breast Cancer CoE funding line and the Gynecological Cancer CoE funding line are transferred from the Army to USUHS.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	1,647.789	279.421	269.473	-	269.473
Current President's Budget	1,594.929	1,782.072	225.250	-	225.250
Total Adjustments	-52.860	1,502.651	-44.223	-	-44.223
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	1,502.651			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-52.860	-			
• Reprogrammings	-	-	-24.223	-	-24.223
• Directed Reduction	-	-	-20.000	-	-20.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 300A: *CSI - Congressional Special Interests*		
Congressional Add: *245A - Amyotrophic Lateral Sclerosis (ALS) Research*	9.665	20.000
Congressional Add: *293A - Autism Research*	7.248	15.000
Congressional Add: *296A - Bone Marrow Failure Disease Research*	2.899	3.000
Congressional Add: *310A - Peer-Reviewed Ovarian Cancer Research*	19.329	35.000
Congressional Add: *328A - Peer- Reviewed Multiple Sclerosis Research*	5.799	16.000
Congressional Add: *335A - Peer-Reviewed Cancer Research*	86.951	110.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0603115DHA *I Medical Technology Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Congressional Add: *336A - Peer-Reviewed Lung Cancer Research*	13.530	14.000
Congressional Add: *337A - Peer-Reviewed Orthopaedic Research*	28.994	30.000
Congressional Add: *338A - Peer-Reviewed Spinal Cord Research*	28.994	40.000
Congressional Add: *339A - Peer-Reviewed Vision Research*	19.314	20.000
Congressional Add: *352A - Traumatic Brain Injury/Psychological Health Research*	96.102	106.000
Congressional Add: *380A - Peer-Reviewed Breast Cancer Research*	125.639	150.000
Congressional Add: *390A - Peer-Reviewed Prostate Cancer Research*	96.645	110.000
Congressional Add: *392A - Gulf War Illness Peer-Reviewed Research*	21.295	22.000
Congressional Add: *396A - Research in Alcohol and Substance Use Disorders*	3.866	0.000
Congressional Add: *400A - Peer-Reviewed Medical Research*	338.309	360.000
Congressional Add: *417A - Peer-Reviewed Alzheimer Research*	14.497	15.000
Congressional Add: *439A - Joint Warfighter Medical Research*	26.589	30.000
Congressional Add: *452A - Peer-Reviewed Reconstructive Transplant Research*	11.597	12.000
Congressional Add: *454A - Orthotics and Prosthetics Outcomes Research*	9.665	15.000
Congressional Add: *456A - HIV/AIDS Program*	12.473	15.000
Congressional Add: *459A - Peer-Reviewed Epilepsy Research*	7.248	12.000
Congressional Add: *463A – Program Increase: Restore Core Research Funding Reduction (GDF)*	242.336	188.151
Congressional Add: *495 - Peer-Reviewed Tick-Borne Disease Research*	4.832	7.000
Congressional Add: *496 -Trauma Clinical Research Program*	9.665	10.000
Congressional Add: *501 - Peer-Reviewed Hearing Restoration Research (Army)*	9.665	10.000
Congressional Add: *502 - CSI - Peer-Reviewed Kidney Cancer Research (Army)*	19.314	40.000
Congressional Add: *503 - CSI - Peer-Reviewed Lupus Research (Army)*	4.832	10.000
Congressional Add: *540A - Global HIV/AIDS Prevention (Navy)*	8.000	8.000
Congressional Add: *660A - Tuberous Sclerosis Complex (TSC)*	5.799	6.000
Congressional Add: *790A - Peer-Reviewed Duchenne Muscular Dystrophy*	3.093	10.000
Congressional Add: *512 - Peer-Reviewed Melanoma Research*	9.665	20.000
Congressional Add: *513 - Chronic Pain Management*	9.665	15.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0603115DHA *I Medical Technology Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Congressional Add: *514 - Combat Readiness Medical Research*	14.512	10.000
Congressional Add: *515 - Peer-Reviewed Pancreatic Cancer Research*	0.000	6.000
Congressional Add: *516 - Peer-Reviewed Rare Cancers Research*	0.000	7.500
Congressional Add: *517 - Peer-Reviewed Scleroderma Research*	0.000	5.000
Congressional Add Subtotals for Project: 300A	1,328.026	1,502.651
Congressional Add Totals for all Projects	1,328.026	1,502.651

Change Summary Explanation

FY 2021: Programmed effort and funding transferred to other higher priority programs.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 300A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
300A: *CSI - Congressional Special Interests*	6,018.979	1,328.026	1,502.651	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

In FY 2018, the Defense Health Program funded Congressional Special Interest (CSI) directed research. The strategy for the FY 2018 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: 245A - Amyotrophic Lateral Sclerosis (ALS) Research	9.665	20.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: N/A		
Congressional Add: 293A - Autism Research	7.248	15.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: N/A		
Congressional Add: 296A - Bone Marrow Failure Disease Research	2.899	3.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: N/A		
Congressional Add: 310A - Peer-Reviewed Ovarian Cancer Research	19.329	35.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: N/A		
Congressional Add: 328A - Peer- Reviewed Multiple Sclerosis Research	5.799	16.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: N/A		
Congressional Add: 335A - Peer-Reviewed Cancer Research	86.951	110.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 300A / *CSI - Congressional Special Interests*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
FY 2019 Accomplishments: N/A ***FY 2020 Plans:*** N/A		
Congressional Add: 336A - Peer-Reviewed Lung Cancer Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	13.530	14.000
Congressional Add: 337A - Peer-Reviewed Orthopaedic Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	28.994	30.000
Congressional Add: 338A - Peer-Reviewed Spinal Cord Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	28.994	40.000
Congressional Add: 339A - Peer-Reviewed Vision Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	19.314	20.000
Congressional Add: 352A - Traumatic Brain Injury/Psychological Health Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	96.102	106.000
Congressional Add: 380A - Peer-Reviewed Breast Cancer Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	125.639	150.000
Congressional Add: 390A - Peer-Reviewed Prostate Cancer Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	96.645	110.000
Congressional Add: 392A - Gulf War Illness Peer-Reviewed Research	21.295	22.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 300A / *CSI - Congressional Special Interests*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
FY 2019 Accomplishments: N/A ***FY 2020 Plans:*** N/A		
Congressional Add: 396A - Research in Alcohol and Substance Use Disorders ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	3.866	0.000
Congressional Add: 400A - Peer-Reviewed Medical Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	338.309	360.000
Congressional Add: 417A - Peer-Reviewed Alzheimer Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	14.497	15.000
Congressional Add: 439A - Joint Warfighter Medical Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	26.589	30.000
Congressional Add: 452A - Peer-Reviewed Reconstructive Transplant Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	11.597	12.000
Congressional Add: 454A - Orthotics and Prosthetics Outcomes Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	9.665	15.000
Congressional Add: 456A - HIV/AIDS Program ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	12.473	15.000
Congressional Add: 459A - Peer-Reviewed Epilepsy Research	7.248	12.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 300A / *CSI - Congressional Special Interests*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
FY 2019 Accomplishments: N/A ***FY 2020 Plans:*** N/A		
Congressional Add: 463A – Program Increase: Restore Core Research Funding Reduction (GDF) ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	242.336	188.151
Congressional Add: 495 - Peer-Reviewed Tick-Borne Disease Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	4.832	7.000
Congressional Add: 496 -Trauma Clinical Research Program ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	9.665	10.000
Congressional Add: 501 - Peer-Reviewed Hearing Restoration Research (Army) ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	9.665	10.000
Congressional Add: 502 - CSI - Peer-Reviewed Kidney Cancer Research (Army) ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	19.314	40.000
Congressional Add: 503 - CSI - Peer-Reviewed Lupus Research (Army) ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	4.832	10.000
Congressional Add: 540A - Global HIV/AIDS Prevention (Navy) ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	8.000	8.000
Congressional Add: 660A - Tuberous Sclerosis Complex (TSC)	5.799	6.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 300A / *CSI - Congressional Special Interests*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
FY 2019 Accomplishments: N/A ***FY 2020 Plans:*** N/A		
Congressional Add: 790A - Peer-Reviewed Duchenne Muscular Dystrophy ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	3.093	10.000
Congressional Add: 512 - Peer-Reviewed Melanoma Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	9.665	20.000
Congressional Add: 513 - Chronic Pain Management ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	9.665	15.000
Congressional Add: 514 - Combat Readiness Medical Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	14.512	10.000
Congressional Add: 515 - Peer-Reviewed Pancreatic Cancer Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	0.000	6.000
Congressional Add: 516 - Peer-Reviewed Rare Cancers Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	0.000	7.500
Congressional Add: 517 - Peer-Reviewed Scleroderma Research ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** N/A	0.000	5.000
Congressional Adds Subtotals	1,328.026	1,502.651

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 300A / *CSI - Congressional Special Interests*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Research proposals will be solicited by program announcements resulting in grants, contracts, or other transactions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 238C / *Enroute Care Research & Development (Budgeted) (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
238C: *Enroute Care Research & Development (Budgeted) (AF)*	23.121	8.237	9.391	11.250	-	11.250	12.675	12.866	13.122	13.387	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to advance aeromedical transport capabilities through the research and development of rapid, more efficient, and safer patient transport from the point of injury to definitive care and to understand the effects of altitude on injured war fighters. Efforts will focus on translating technological advancements and groundbreaking clinical research into products. The sub-project areas include: Impact of Transport on patients and providers (physiological effects of transport factors on patients and crew and impact of transport times on En-Route Trauma and Resuscitative Care), patient safety (includes En-Route data analytics and the optimization of patient care), medical technologies which includes technology advances and clinical assessment at altitude, and research to support En-Route education and training with simulation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Enroute Care Research & Development (Budgeted) (AF)	8.237	9.391	11.250

Description: This project area seeks to advance aeromedical transport capabilities through the research and development of rapid, more efficient, and safer patient transport from the point of injury to definitive care and to understand the effects of altitude on injured war fighters. Efforts will focus on translating technological advancements and groundbreaking clinical research into products. The sub-project areas include: Impact of Transport on patients and providers (physiological effects of transport factors on patients and crew and impact of transport times on En-Route Trauma and Resuscitative Care), patient safety (includes En-Route data analytics and the optimization of patient care), medical technologies which includes technology advances and clinical assessment at altitude, and research to support En-Route education and training with simulation.

FY 2020 Plans:

Continue pursuing the AFMS strategic goal A1 to “Transform the En-Route Care System” based on war fighter identified gaps and validated requirements. Begin and/or continue work that will improve mission effectiveness in the A2AD environment such as closed loop technologies and enabling capabilities leading to autonomous patient transport. Plans are to complete multicenter closed-loop ventilation device trials. Continue austere, pre-transport, qualitative clinical testing. Continue to identify independent predictors that are associated with increased survival among patients in a combat theater and update clinical practice and training guidelines to support resulting best practices. Evaluate the influence of altitude, oxygenation, and sedation on neurodegeneration following traumatic brain injury (TBI). Analyses will be conducted assessing the critical impact of hypobaria after hemorrhage and resuscitation. Initiate a retrospective study of patients with traumatic brain injury transported by critical care transport team (CCATT). Assess the effects of aeromedical evacuation on the risk of vasospasm following TBI. Evaluate mechanisms for neuroprotection including hydroxocobalamin in a hemorrhagic model of global and traumatic brain ischemia and to understand and therapeutically target the physiological response associated with prolonged field care and extended hold time.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 238C / *Enroute Care Research & Development (Budgeted) (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Perform service-connected life trajectory comparison of psychiatric aeromedical evacuation and non-psychiatric aeromedical evacuation patients. Studies will evaluate post-traumatic stress disorder reduction using intravenous corticosteroids with analysis of biomarkers using metabolomics. Establish database for medical evacuation treatment indicators with care and resolution outcomes. Discovery, refinement, and implementation of advanced genetics, epigenetics, and transcriptome technologies to predict resiliency and to enhance point-of-care medical and aeromedical decision making. Continue with developing research objectives and end states focused on Clinical En Route Care and Patient Safety; En Route Care Education, Training and Simulation; En Route Care Medical Technologies; Impact of Transport; and Clinical/Patient Decision Support and Monitoring. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. Analyses will demonstrate the critical impact of hypobaria after hemorrhage and resuscitation. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increased funding resulting from realignment within Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element(PE) 0603115DHA- Medical Technology Development among Project Codes 285A- Operational Medicine Research & Development (AF),308B- Expeditionary Medicine Research & Development (AF),238C- Enroute Care Research & Development (AF), 284B- USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (AF), and 307B- Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (AF) to focus on future readiness mission and operational medical capabilities required to support the warfighter.			
Accomplishments/Planned Programs Subtotals	8.237	9.391	11.250

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, PE 0807714HP: *Other Consolidated Health Support*	-	-	-	-	-	-	-	-	-		

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 238C / *Enroute Care Research & Development (Budgeted) (AF)*

are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 238D / *Core Enroute Care R&D - Clinical Translational Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
238D: *Core Enroute Care R&D - Clinical Translational Focus (AF)*	0.997	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to advance aeromedical transport capabilities through the research and development of rapid, more efficient, and safer patient transport from the point of injury to definitive care and to understand the effects of altitude on seriously injured war fighters. Efforts will focus on translating technological advancements and groundbreaking clinical research into transitionable products. The sub-project areas include: Physiological Effects of Aeromedical Evacuation on patients and crew which includes the optimization of provider performance and patient care, impact of transport times on En-Route Trauma and Resuscitative Care, and En-Route Patient Safety which includes technology advances and assessment. Because patients experience multiple handoffs between teams of caregivers during transport between austere environments and definitive care, efforts in the En-Route Patient Safety sub-project area examine human factors considerations in order to develop new and enhance existing methods to mitigate risk in all En-Route care environments.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 238E / *Core Enroute Care R&D - Aerospace Medicine/Human Performance Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
238E: *Core Enroute Care R&D - Aerospace Medicine/Human Performance Focus (AF)*	0.997	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to advance aeromedical evacuation (AE), Critical Care Air Transport Team (CCATT), and Tactical Critical Care Evacuation Team (TCCET) capabilities through the research and development of rapid, more efficient, and safer patient transport from the pre-staging for strategic or intra-theater air evacuation to definitive care, and to understand the effects of transport on injured war fighters. Efforts will focus on translating technological advancements and groundbreaking clinical research into translatable practice and technology products. The sub-project areas include: Impact of Transport on patients and crew which includes the optimization of provider performance and patient care, En-Route Medical Technologies which includes technology advances and assessment, and En-Route Patient Safety which includes efforts to ensure the safe transport of patients through the AE system.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SEE PROJECT CODE 238C PROGRAM FUNDING SUMMARY FOR PROJECT CODE 238E WHICH IS A SUMMARY OF OTHER PROGRAM FUNDING SUPPORT TO ALL PROJECTS AND PROGRAMS IN THIS PE FOR DHP-AF.

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 243A / *Medical Development (Lab Support) (Navy)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
243A: *Medical Development (Lab Support) (Navy)*	164.298	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

For the Navy Bureau of Medicine and Surgery, this program element (PE) includes costs related to laboratory management and support salaries of government employees that are not paid from science/research competitively awarded funding. The Outside Continental U.S. (OCONUS) laboratories conduct focused medical research on vaccine development for Malaria, Diarrhea Diseases, and Dengue Fever. In addition to entomology, the labs focus on HIV studies, surveillance and outbreak response under the Global Emerging Infections Surveillance (GEIS) program, and risk assessment studies on a number of other infectious diseases that are present in the geographical regions where the laboratories are located. The CONUS laboratories conduct research on Military Operational Medicine, Combat Casualty Care, Diving and Submarine Medicine, Infectious Diseases, Environmental and Occupational Health, Directed Energy, and Aviation Medicine and Human Performance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Development (Lab Support) (Navy)	0.000	-	-
Description: Funding in this project code covers operating and miscellaneous support costs at RDT&E laboratories, including facility, equipment and civilian personnel costs that are not directly chargeable to RDT&E projects. Excluded costs include military manpower and related costs, non-RDT&E base operating costs, and military construction costs, which are included in other appropriate programs.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 247A / *Elimination of Malaria in Southeast Asia (CARB) (Navy)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
247A: *Elimination of Malaria in Southeast Asia (CARB) (Navy)*	5.812	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.812

A. Mission Description and Budget Item Justification

This project seeks to demonstrate that malaria can be eliminated in a specific geographically defined area of endemicity through a comprehensive multi-disciplined approach including enhanced surveillance, research to maximize the impact of intervention strategies, and quality improvement of current tools for malaria elimination. The demonstration will focus on Vietnam where multi-drug resistant malaria is prevalent and as such represents a significant threat to US personnel. Additionally, the Vietnamese military and Ministry of Health have a high level of interest in malaria control and will collaborate in the malaria elimination demonstration project, significantly improving the chances of success of this project. Successful completion of this project could significantly enhance force health protection and global engagement by providing a vetted approach to malaria control in the Southeast Asia region where multi-drug resistant malaria is a major infectious disease threat. This project supports (both directly and indirectly in a priority country - Vietnam) Global Health Security Agenda priorities: Combat Antibiotic Resistance Bacteria (CARB); Prevent Avoidable Epidemics; Detect Threats Early; and Respond Rapidly and Effectively to biological threats of international concern.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Elimination of Malaria in Southeast Asia (CARB) (Navy)	0.000	-	-
Description: This project seeks to demonstrate that malaria can be eliminated in a specific geographically defined area of endemicity through a comprehensive multi-disciplined approach including enhanced surveillance, operations research to maximize the impact of intervention strategies, and quality improvement of current tools for malaria elimination. The demonstration will focus on Vietnam where multi-drug resistant malaria is prevalent and as such represents a significant threat to US personnel. Additionally, the Vietnamese military and Ministry of Health have a high level of interest in malaria control and will collaborate in the malaria elimination demonstration project significantly improving the chances of success of this project. FY 2018 Accomplishments: Enhanced surveillance activities with the Ministry of Health were continued at sites in central Vietnam and on the Laos border. This project has identified risk factors among forest goers, similar to US military personnel in terms of age, health and activity, associated with acquiring malaria. Preliminary data from 2015 and 2016 presented at the American Society of Tropical Medicine and Hygiene (Nov 2016); this information will inform future studies on malaria interventions. To continue work in Vietnam with the Ministry of Health a 2-year work plan was approved in Jul 2016. Continued recruitment of Vietnam-Australia-US military collaborative study to characterize drug resistance in central Vietnam. Preliminary data, indicating no drug resistance present at study site, presented at the USPACOM Asia Pacific Military Health Exchange in Kuantan, Malaysia (Aug 2016). Cross sectional study protocol approved by Vietnam Ministry of Defense; this project started in Q1 FY17 targeting people served by military clinics in Gai Lia Province, a remote area on the Cambodia border.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 247A / *Elimination of Malaria in Southeast Asia (CARB) (Navy)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 247B / *Mitigate the Global Impact of Sepsis Through ACESO (CARB) (Navy)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
247B: *Mitigate the Global Impact of Sepsis Through ACESO (CARB) (Navy)*	3.782	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.782

A. Mission Description and Budget Item Justification

This project seeks to demonstrate that the impact of sepsis (severe infections) in Egypt can be mitigated through the Austere Environment Consortium for Enhanced Sepsis Outcomes (ACESO) approach of discovering common, host-based pathogenic pathways for improved recognition and management of sepsis and point of care (POC) diagnostic and prognostic biomarker panels. Sepsis is the common path to end-organ damage and death for a large proportion of globally-important infectious diseases. This project will improve the understanding of disease pathogenesis and antimicrobial resistance mechanisms through network and biomarker analysis thus offering unique opportunities for improving sepsis diagnosis and management. Through systematic biology, it will develop insight into the disease pathogenesis of sepsis, and host factors which predict susceptibility, and sepsis severity provides opportunity for targeted interventions to forestall morbidity and mortality. Furthermore, enhanced knowledge of emerging antimicrobial resistance in strategic regions informs ongoing surveillance and mitigation efforts of critical importance to deployed forces. Successful completion of this project will provide reliable antimicrobial resistance data for forces deploying to Egypt and the region and also document improved methods for the treatment and management of sepsis. ACESO is an international consortium of sepsis researchers led by Naval Medical Research Center (NMRC) that has established a network of sepsis research sites in SE Asia and Sub-Saharan Africa to improve clinical outcomes and advance our understanding of pathogenesis, biomarkers of sepsis and antimicrobial resistance trends. The largest infectious disease hospital in Egypt, Abbassia Fever Hospital, provides critical severe infection and antimicrobial resistance data from the North African Theater. This project supports (both directly and indirectly) Global Health Security Agenda priorities: Combat Antibiotic Resistance Bacteria (CARB); Prevent Avoidable Epidemics; Detect Threats Early; and Respond Rapidly and Effectively to biological threats of international concern.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Mitigate the Global Impact of Sepsis Through ACESO (CARB) (Navy)	0.000	-	-
Description: This project seeks to demonstrate that the impact of sepsis from resistant and other high risk organisms in Egypt can be mitigated through the ACESO approach of discovering common, host-based pathogenic pathways for improved recognition and management of sepsis. This project will improve understanding of pathogenesis and antimicrobial resistance mechanisms through network and biomarker analysis to offer unique opportunities for improving sepsis diagnosis and management. Most specifically, ACESO will execute biomarker discovery identifying diagnostic and prognostic biomarker panels which may improve sepsis management in all environments including resourced and austere. FY 2018 Accomplishments: FY 2018 efforts supported continued enrollment of severely ill patients in an observational study in Cambodia at Takeo Provincial Hospital and in Ghana at Komfo Anoyke Teaching Hospital (KATH). The goals of this study are to 1) identify diagnostic and prognostic markers, 2) investigate common pathogenic pathways, 3) describe the spectrum of pathogens causing sepsis,			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 247B / *Mitigate the Global Impact of Sepsis Through ACESO (CARB) (Navy)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
4) describe the treatment strategies currently in use, and 5) assess the long-term sequelae. Adult patients with suspected infection and evidence of systemic inflammation were considered for enrollment. Laboratory testing augmented the testing routinely performed at the hospital microbiology laboratory, and included diagnostic tests (e.g. blood cultures, malaria smears, HIV tests, and serology), molecular diagnostics, and assays measuring the host-response (RNA sequencing, proteomics, and metabolomics). Sophisticated analytic and statistical approaches are being applied to the complex data set to identify diagnostic and prognostic markers for sepsis and to investigate common pathogenic pathways. The Vietnam-Australia-US military study of drug resistance patterns in Central Vietnam was closed in Jan 2017 due to a lower than expected malaria burden. Preliminary data supports previous findings, reported in FY16, that there is no resistance for 1st choice malaria drug treatments. Additionally, a review of Vietnam malaria burden, control measures and environmental factors was initiated; the preliminary findings suggest increased average daily temperature was a primary factor of decreased malaria rates. Recruitment for the cross-sectional study in Gai Lia Province (on the border with Cambodia) started in Dec 2016 and was completed in Feb 2017. Sample and data analysis are ongoing, however, preliminary results from the >3,000 participants indicate the rate of patients without symptoms, but still carrying malaria parasite, was >1.25% in this study population, representing a silent malaria transmission risk in this forested, border region on the Cambodia-Vietnam border. The study of Vietnamese workers returning from Africa was initiated in Q2 FY17 with concurrent records review was stated for malaria patients recently returned from Africa presenting for care at two referral medical facilities in Ha Noi in 2014-2016. Preliminary results were accepted for presentation at the Joint International Tropical Medicine Meeting in Bangkok, Thailand from 06-08 Dec 2017. These data suggest delayed malaria clearance in patients returning from Africa was likely due to delayed medical treatment and not from malaria drug resistance.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 284B / *USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (Budgeted) (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
284B: *USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (Budgeted) (AF)*	19.043	7.300	8.576	10.418	-	10.418	11.122	11.471	11.700	11.934	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to enhance, optimize & sustain performance of Air Force personnel through the evaluation and alleviation of health effects associated with carrying out assigned missions. This work addresses unique Air Force operational environments such as the mitigation of stress on personnel involved in remote piloted aircraft operations. The sub-project areas include: Cognitive Performance which includes fatigue management, Physiological Performance and Targeted Conditioning which includes training techniques for optimal performance, and identification of solutions related to Operational and Environmental Challenges to Performance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (Budgeted) (AF)	7.300	8.576	10.418
Description: This project area seeks to enhance, optimize & sustain performance of Air Force personnel through the evaluation and alleviation of health effects associated with carrying out assigned missions. This work addresses unique Air Force operational environments such as the mitigation of stress on personnel involved in remote piloted aircraft operations. The sub-project areas include: Cognitive Performance which includes fatigue management, Physiological Performance and Targeted Conditioning which includes training techniques for optimal performance, and identification of solutions related to Operational and Environmental Challenges to Performance.			
FY 2020 Plans: Continue implementation of the Optimization of AF Human Capital Research Plan focused on medical readiness to support airman mission alignment. Advance understanding of appropriate selection pertaining to new accessions, job placement, injury reduction and retention. Continue assessment and validation of standards across research lines in the areas of vision, psychology, and physiology for high risk and high demand airman career fields. Develop model to assess and validate return of investment on embedded medics. Work to characterize at risk mission sets and operator/aircrew needs to optimize performance in high altitude environment to inform operational changes and determine safe altitudes for long-term exposures. Advance understanding of neuroprotection and/or neurotreatment therapies designed to mitigate hyperoxemic brain injury/effects.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 284B / *USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (Budgeted) (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Additional studies will examine the influence of lower extremity stress fracture on the career trajectories of USAF Basic Military Trainees. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increased funding resulting from realignment within Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element(PE) 0603115DHA- Medical Technology Development among Project Codes 285A- Operational Medicine Research & Development (AF),308B- Expeditionary Medicine Research & Development (AF),238C- Enroute Care Research & Development (AF), 284B- USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (AF), and 307B- Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (AF)to focus on future readiness mission and operational medical capabilities required to support the warfighter.			
Accomplishments/Planned Programs Subtotals	7.300	8.576	10.418

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 284C / *Core Human Performance R&D - Clinical Translational Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
284C: *Core Human Performance R&D - Clinical Translational Focus (AF)*	1.003	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to enhance, optimize & sustain performance of Air Force personnel through the evaluation and alleviation of health effects associated with carrying out assigned missions. This work addresses unique Air Force training and operational environments such as the mitigation of Musculoskeletal Injury on personnel in Air Force Basic Training and high demand operations. The sub-project areas include: Cognitive Performance which includes assessing Impact of Recurrent Hypobaric Exposure, Physical Performance and Targeted Conditioning which includes providing Evidence Based Prevention Strategies and Health Programs for Optimal Performance, and Identification of Clinical Solutions to Mitigate Operational and Environmental Challenges to Performance. Optimization of Human Capital Selection: Prognostic parameters to the success of airmen in various career field in particular sustain Airmen Trainee Health. These will include selection in mental, social, and physical determinants. These also may include genomic indicators that might suggest physical and mental resiliency to different occupational stressors (tasks, environment, etc.…) and indicators to recovery to baseline to different occupational stressors or frank injury/disease.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SEE PROJECT CODE 284B PROGRAM FUNDING SUMMARY FOR PROJECT CODE 284C WHICH IS A SUMMARY OF OTHER PROGRAM FUNDING SUPPORT TO ALL PROJECTS AND PROGRAMS IN THIS PE FOR DHP-AF

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 284D / *Core Human Performance R&D - Aerospace Medicine/Human Performance Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
284D: *Core Human Performance R&D - Aerospace Medicine/ Human Performance Focus (AF)*	1.002	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to enhance, optimize & sustain performance of Air Force personnel through the evaluation and alleviation of health effects associated with carrying out assigned AF missions. This work addresses unique Air Force operational environments such as the mitigation of physiological and cognitive demand on personnel involved in both piloted and remote piloted aircraft operations. Understanding and measuring aviation performance and developing injury prevention strategies to optimize performance of AF personnel. Identification and mitigation of stress on personnel involved in Intelligence, Surveillance, and Reconnaissance operations. The sub-project areas include: Air Force Aircrew Physiology and Cognition Performance which includes pilot performance monitoring, interventions and fatigue management. AF unique Physical, Psychological, Behavioral and Physiological Performance and Targeted Conditioning Mitigation which includes personalized performance and training techniques for optimal performance, Aviator Injury Prevention and Performance Optimization, Select training and simulation to optimize performance of AF operators and personnel. Optimization of Human Capital, Advancing Medical Readiness for Optimal Performance, and Identification of techniques, treatments, and technical solutions to mitigate Operational and Environmental Challenges to Performance.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 285A / *Operational Medicine Research & Development (Budgeted) (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
285A: *Operational Medicine Research & Development (Budgeted) (AF)*	25.807	4.082	4.089	0.232	-	0.232	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Medicine Thrust Area develops validated solutions for the delivery of preventative care, intervention and treatment to Active Duty members and DoD beneficiaries. The primary focus areas include: physiologic and psychological health; sub-topics include resilience, personalized medicine, patient safety, and care coordination. Basic research initiatives are developed and translated into practice; advanced technology initiatives are focused on prevention and treatment of chronic disease such as obesity and diabetes. Personalized medicine focuses on genomic issues related to autism, asthma, and obesity.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Operational Medicine Research & Development (Air Force)	4.082	4.089	0.232
Description: The Operational Medicine Thrust Area develops validated solutions for the delivery of preventative care, intervention and treatment to Active Duty members and DoD beneficiaries. The primary focus areas include: physiologic and psychological health; sub-topics include resilience, personalized medicine, patient safety, and care coordination. Basic research initiatives are developed and translated into practice; advanced technology initiatives are focused on prevention and treatment of chronic disease such as obesity and diabetes. Personalized medicine focuses on genomic issues related to autism, asthma, and obesity.			
FY 2020 Plans: The analysis of genotypes and phenotypes on NIH databases for Air Force precision medicine applications will continue, including the identification of risk factors for pulmonary disorders by associating genomic polymorphisms with pulmonary diseases including asthma, COPD and sarcoidosis. Research will continue on the development of a silica encapsulated dental polymeric material that upon degradation, damage, or fracture, self-repairs the injury. The current military separation and retirement practices by health care providers will be investigated, including assessment and communication of diabetes risk to separating or retiring members and counseling regarding how to minimize risk. Continued research includes the development of an exportable Diabetes Self-Management Education (DSME) methodology that can be used throughout the Military Health System (MHS) to support national diabetes education and support standards for patient care. Triggerable release, reloadable, smart hydrogels for graft targeted immunotherapy in reconstructive transplantation will continue to be performed and evaluated.			
FY 2021 Plans: FY 2021 plans continue efforts as outlined in FY 2020. Research will continue developing diabetes tools, education, and coaching techniques to reduce the cost of patient care and improve outcomes in patients with Type 2 diabetes.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 285A / *Operational Medicine Research & Development (Budgeted) (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Reduced funding due to realignment within Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element(PE) 0603115DHA- Medical Technology Development among Project Codes 285A- Operational Medicine Research & Development (AF),308B- Expeditionary Medicine Research & Development (AF),238C- Enroute Care Research & Development (AF), 284B- USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (AF), and 307B- Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (AF)to focus on future readiness mission and operational medical capabilities required to support the warfighter.			
Accomplishments/Planned Programs Subtotals	4.082	4.089	0.232

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 285B / *Core Operational Medicine R&D - Clinical Translational Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
285B: *Core Operational Medicine R&D - Clinical Translational Focus (AF)*	0.929	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Medicine Thrust Area develops validated solutions for the delivery of preventative care, intervention and treatment to Active Duty members and DoD beneficiaries. The primary focus areas include: physiologic and psychological health; sub-topics include resilience, personalized medicine, patient safety, and care coordination. Basic research initiatives are developed and translated into practice; advanced technology initiatives are focused on prevention and treatment of chronic disease such as obesity and diabetes. Personalized medicine focuses on genomic issues related to autism, asthma, and obesity.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SEE PROJECT CODE 285A PROGRAM FUNDING SUMMARY FOR PROJECT CODE 285B WHICH IS A SUMMARY OF OTHER PROGRAM FUNDING SUPPORT TO ALL PROJECTS AND PROGRAMS IN THIS PE FOR DHP-AF

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 285C / *Core Operational Medicine R&D - Aerospace/Human Performance Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
285C: *Core Operational Medicine R&D - Aerospace/ Human Performance Focus (AF)*	0.928	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to provide research and development affecting AF beneficiary populations requiring specialized handling during routine medical care such as pilots, RPA operators, special tactics operators and personnel reliability program members. Research will evaluate and determine if special approaches to personal health and performance are required for these beneficiaries. It will also ascertain if conditions not found in the general patient population are applicable to those in this area of interest and conversely if there are conditions or trends in this population requiring attention that are not normally found in the general AF/DoD beneficiary pool. Overall research in this project will support optimization of health care delivery services to all AF/DoD beneficiaries but will focus on high-value asset personnel.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SEE PROJECT CODE 285A PROGRAM FUNDING SUMMARY FOR PROJECT CODE 285C WHICH IS A SUMMARY OF OTHER PROGRAM FUNDING SUPPORT TO ALL PROJECTS AND PROGRAMS IN THIS PE FOR DHP-AF

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 307B / *Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (Budgeted) (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
307B: *Force Health Protection, Advanced Diagnostics/ Therapeutics Research & Development (Budgeted) (AF)*	65.644	6.928	8.199	10.046	-	10.046	11.463	11.630	11.862	12.098	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to deliver improved capabilities across the full spectrum of operations in the areas of Directed Energy and Occupational and Environmental Health. Research in the Directed Energy sub-project area seeks to develop technologies to "detect to warn" and "detect to protect" AF operators such that they can take appropriate actions to prevent or minimize exposure leading to adverse health effects. Research in the Occupational and Environmental Health sub-project area involves the assessment and implementation of innovative new technologies that enable effective surveillance, detection, identification, and mitigation of hazardous chemical, biological, and physical hazards that present a health risk to our forces and threaten to degrade and disrupt the missions they execute. Air Force FHP efforts focus on health protection across the spectrum of AF air and ground operations. These include hazards presented to high performance and high flyer aircraft crews facing extreme environments within their flight envelopes that are potentially more sensitive to physiologic and cognitive stressors and rely on aircraft systems to provide life support for protection. Because Air Force installations are typically very strategically important in combat execution, they are more often tied to performing ops at fixed locations; therefore, they drive the need to detect and identify the USAF and environment-specific risks posed by chemical, biological, directed energy, and other radiological and physical hazards immediately and on-site so that operations can be resumed as quickly as possible. This requires enhanced monitoring capability, such as man-portable gold-standard hazard detection. Research is needed to improve these capabilities and to account for emerging threats. The mission needs driving the ability to detect also drives the need to rapidly reduce or mitigate threats once discovered. State of the art detection and monitoring equipment, therefore, is also an important FHP research need.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (Budgeted) (Air Force)	6.928	8.199	10.046
Description: This project area seeks to deliver improved capabilities across the full spectrum of operations in the areas of Directed Energy and Occupational and Environmental Health. Research in the Directed Energy sub-project area seeks to develop technologies to "detect to warn" and "detect to protect" AF operators such that they can take appropriate actions to prevent or minimize exposure leading to adverse health effects. Research in the Occupational and Environmental Health sub-project area involves the assessment and implementation of innovative new technologies that enable effective surveillance, detection, identification, and mitigation of hazardous chemical, biological, and physical hazards that present a health risk to our forces and threaten to degrade and disrupt the missions they execute. Air Force FHP efforts focus on health protection across the spectrum of AF air and ground operations. These include hazards presented to high performance and high flyer aircraft crews facing extreme environments within their flight envelopes that are potentially more sensitive to physiologic and cognitive			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 307B / *Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (Budgeted) (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021

stressors and rely on aircraft systems to provide life support for protection. Because Air Force installations are typically very strategically important in combat execution, they are more often tied to performing ops at fixed locations; therefore, they drive the need to detect and identify the USAF- and environment-specific risks posed by chemical, biological, directed energy, and other radiological and physical hazards immediately and on-site so that operations can be resumed as quickly as possible. This requires enhanced monitoring capability, such as man-portable gold-standard hazard detection. Research is needed to improve these capabilities and to account for emerging threats. The mission needs driving the ability to detect also drives the need to rapidly reduce or mitigate threats once discovered. State of the art detection and monitoring equipment, therefore, is also an important FHP research need.

Recently, research supporting flight line simulations helped guide infrastructure changes at fighter base to accommodate the receipt of aircraft and minimize heat damage to air/ground crews and other jets. Sensors entered into testing to guide methodology for base-level pilot breathing air characterization.

FY 2020 Plans:

Develop Force and Individual Comprehensive Health Protection System (FInCH) that knows an individual health threat environment and assesses, documents, and informs actions on a real-time basis. Continue study to evaluate breath biomarkers as diagnostic for influenza A. Continue comprehensive evaluation of known naturally occurring genetic variations and experimentally induced mutations in mammalian genes that confer varying degrees of resistance to infectious diseases. A database and software interface will continue to be constructed to allow preventive medicine physicians at training bases to query training population data for epidemiologic purposes. Examine alternate tinnitus management techniques using blood-oxygen-level-dependent MRI with neurofeedback. Evaluate genetic markers for musculoskeletal injuries and ailments. Develop capabilities for remote sensing of environmental hazards. Develop capabilities to efficiently and effectively continuously monitor personnel exposures, securely transmit the information and capture in searchable database for future reference. Perform assessment of subtle cognitive and respiratory effects of low-level exposures from low-level exposures in the challenging environments associated with AI operations. Initiate development of automated algorithms that incorporate environmental sensor and risk assessment to determine appropriate mitigation actions in real time as hazards are presented in-flight and in ground operations. Continue early detection, real time prediction of bioenvironmental impact, disease outbreak and intervention, data analytics and information sharing. Continue development and demonstration of the rapid transition of analytics tools that convert a multitude of health related data sources into actionable information based on operational context. Develop a communications platform that can collected exposure and health care data from multiple sources and transmit that data in a compressed format.

Additionally, a tiered research plan will be built to address the medical challenges of RF exposure and further validate the clinical guidance and training for clinicians to diagnose and treat greater potential RF weapons insult/injury exposure. The Program will

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 307B / *Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (Budgeted) (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
evaluate groundbreaking technologies, therapies and tools to detect, diagnose and deter DE or RFR exposure and to prevent, preserve and protect cells, tissues and organ system functions and homeostasis from the disruptive and damaging effects of directed energy (DE). An MRI and biomarker model for DE exposure will be developed for medical evaluation. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding changes reflect a realignment within Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element(PE) 0603115DHA- Medical Technology Development among Project Codes 285A- Operational Medicine Research & Development (AF),308B- Expeditionary Medicine Research & Development (AF),238C- Enroute Care Research & Development (AF), 284B- USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (AF), and 307B- Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (AF) to focus on future readiness mission and operational medical capabilities required to support the warfighter.			
Accomplishments/Planned Programs Subtotals	6.928	8.199	10.046

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 307C / *Core Force Health Protection R&D - Clinical Translational Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
307C: *Core Force Health Protection R&D - Clinical Translational Focus (AF)*	0.545	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project seeks to deliver improved capabilities across the full spectrum of operations in the areas of Directed Energy and Occupational and Environmental Health. Research in the Directed Energy sub-project area seeks to develop technologies to "detect to warn" and "detect to protect" AF operators such that they can take appropriate actions to prevent or minimize exposure leading to adverse health effects. Research in the Occupational and Environmental Health sub-project area involves the assessment and implementation of innovative new technologies that enable effective surveillance, detection, identification, and mitigation of hazardous chemical, biological, and physical hazards that present a health risk to our forces and threaten to degrade and disrupt the missions they execute. Air Force FHP efforts focus on health protection across the spectrum of AF air and ground operations. These include hazards presented to high performance and high flyer aircraft crews facing extreme environments within their flight envelopes that are potentially more sensitive to physiologic and cognitive stressors and rely on aircraft systems to provide life support for protection. Because Air Force installations are typically very strategically important in combat execution, they are more often tied to performing ops at fixed locations; therefore, they drive the need to detect and identify the USAF and environment-specific risks posed by chemical, biological, directed energy, and other radiological and physical hazards immediately and on-site so that operations can be resumed as quickly as possible. This requires enhanced monitoring capability, such as man-portable gold-standard hazard detection. Research is needed to improve these capabilities and to account for emerging threats. The mission needs driving the ability to detect also drives the need to rapidly reduce or mitigate threats once discovered. State of the art detection and monitoring equipment, therefore, is also an important FHP research need.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 307D / *Core Force Health Protection R&D - Aerospace Medicine/Human Performance Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
307D: *Core Force Health Protection R&D - Aerospace Medicine/Human Performance Focus (AF)*	0.400	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area conducts research to identify, evaluate and control occupational hazards in the workplace-including all settings such as deployed, in the aircraft, in the industrial (in garrison) environment or during emergency response. Information gained means risks are more fully understood with respect to potential mission impact or long-term health effect (Go vs. No Go above some pre-defined hazard level). Key focus areas include a better understanding of dosing, rates of dosing, and mechanistic effects of chemical, biological, radiological, directed energy, and other occupational exposure threats. This includes subtle cognitive effects where there is potential mission impact. Technological opportunities towards non-invasive sensing of the human and the environment are growing and can be exploited to enhance understanding of the risks and enable development of appropriate mitigation and treatment options.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 308B / *Expeditionary Medicine Research & Development (Budgeted) (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
308B: *Expeditionary Medicine Research & Development (Budgeted) (AF)*	20.100	4.881	3.636	2.623	-	2.623	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area identifies cutting edge techniques and technologies that can be employed by AF medics during contingency operations. Sub-project areas include: Expeditionary Logistics and Expeditionary Casualty Care. Expeditionary Logistics seeks to develop/validate novel procedures, materials, techniques, and tools to reduce size and weight, optimize power requirements, and minimize logistics footprint associated with expeditionary operations. It also examines ways to standardize equipment and supplies used by medical response teams because of the increasing number of missions that find teams from different countries working together. Expeditionary Casualty Care focuses on optimizing existing and developing new casualty care tools and techniques, improving methods and techniques for remote monitoring and triage systems, identifying and mitigating issues related to casualty care in an expeditionary setting, and validation of best-fit technologies in casualty care missions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Expeditionary Medicine Research & Development (Air Force)	4.881	3.636	2.623

Description: This project area identifies cutting edge techniques and technologies that can be employed by AF medics during contingency operations. Sub-project areas include: Expeditionary Logistics and Expeditionary Casualty Care. Expeditionary Logistics seeks to develop/validate novel procedures, materials, techniques, and tools to reduce size and weight, optimize power requirements, and minimize logistics footprint associated with expeditionary operations. It also examines ways to standardize equipment and supplies used by medical response teams because of the increasing number of missions that find teams from different countries working together. Expeditionary Casualty Care focuses on optimizing existing and developing new casualty care tools and techniques, improving methods and techniques for remote monitoring and triage systems, identifying and mitigating issues related to casualty care in an expeditionary setting, and validation of best-fit technologies in casualty care missions.

FY 2020 Plans:

Smart polymer-based systems for graft-targeted immunotherapy will continue to be developed to minimize systemic immunosuppression in reconstructive transplantation. Research will continue to evaluate therapies to restore and augment peripheral nerve regeneration and optimize sensory/motor reinnervation for restoration of battlefield injuries applicable to replantation, transplantation, and isolated nerve injuries. Work will continue on the development of VentRight, portable ventilation monitoring combining inline flow, pressure, and CO2 sensors, pulse oximetry, and advanced analytic algorithms for soldiers with respiratory failure, guiding resuscitation by medics or untrained providers in austere conditions or at central MTF.

The autonomous selective organ perfusion (ASOP) platform will be evaluated for prolonged field and enroute care applications. Research on the use of intramuscular tranexamic acid (TXA) will continue in a model of hemorrhagic shock and prolonged

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 308B / *Expeditionary Medicine Research & Development (Budgeted) (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
field care/delayed evacuation. The ability of gold standard and field portable Virtual Reality will continue to improve or augment pain reduction in combat relevant environments. A reproducible protocol for utilizing teleophthalmology will be developed and standardized, assessing the cyber and data security of teleophthalmology devices, and creating a teleophthalmology training program for military ophthalmologists. Methods will be devised and evaluated to capture thrombi due to complications from REBOA treatment. Research will continue to determine if current medical logistic practices need to be reevaluated for storage of medications in high humidity and extreme temperatures used at point-of-injury. ***FY 2021 Plans:*** The autonomous selective organ perfusion (ASOP) platform will continue to be evaluated for prolonged field and enroute care applications. Forward operating base ocular trauma telemedicine triage and stabilization will continue. Studies will continue to evaluate strategies to treat occult non-compressible torso hemorrhage. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Reduced funding due to realignment within Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element(PE) 0603115DHA- Medical Technology Development among Project Codes 285A- Operational Medicine Research & Development (AF),308B- Expeditionary Medicine Research & Development (AF),238C- Enroute Care Research & Development (AF), 284B- USAF Human Physiology, Systems Integration, Evaluation & Optimization Research (AF), and 307B- Force Health Protection, Advanced Diagnostics/Therapeutics Research & Development (AF)to focus on future readiness mission and operational medical capabilities required to support the warfighter.			
Accomplishments/Planned Programs Subtotals	4.881	3.636	2.623

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 308C / *Core Expeditionary Medicine R&D - Clinical Translational Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
308C: *Core Expeditionary Medicine R&D - Clinical Translational Focus (AF)*	1.503	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area identifies cutting edge techniques and technologies that can be employed by AF medics during contingency operations. Sub-project areas include: Expeditionary Logistics and Expeditionary Casualty Care. Expeditionary Logistics seeks to develop/validate novel procedures, materials, techniques, and tools to reduce size and weight, optimize power requirements, and minimize logistics footprint associated with expeditionary operations. It also examines ways to standardize equipment and supplies used by medical response teams because of the increasing number of missions that find teams from different countries working together. Expeditionary Casualty Care focuses on optimizing existing and developing new casualty care tools and techniques, improving methods and techniques for remote monitoring and triage systems, identifying and mitigating issues related to casualty care in an expeditionary setting, and validation of best-fit technologies in casualty care missions.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SEE PROJECT CODE 308B PROGRAM FUNDING SUMMARY FOR PROJECT CODE 308C WHICH IS A SUMMARY OF OTHER PROGRAM FUNDING SUPPORT TO ALL PROJECTS AND PROGRAMS IN THIS PE FOR DHP-AF

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 308D / *Core Expeditionary Medicine R&D - Aerospace/Human Performance Focus (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
308D: *Core Expeditionary Medicine R&D - Aerospace/ Human Performance Focus (AF)*	1.502	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project area seeks to standardize training in use of deployed equipment and supplies because of the increasing number of missions that find teams from different countries working together. Evaluation of skills required in an environment with a lack of air dominance and vast geographic distances in future theaters that increases the tactical field care required and tactical evacuation care phases of casualty care in Role II care that may be unavailable for up to 48 hrs after injury and casualties will be maintained by field providers. Determination of what is required to train peacetime military care providers military medical providers with minimal experience in pre-hospital or acute trauma/critical care yet expert delivery of this care is absolutely required in an austere, isolated environment.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SEE PROJECT CODE 308B PROGRAM FUNDING SUMMARY FOR PROJECT CODE 308D WHICH IS A SUMMARY OF OTHER PROGRAM FUNDING SUPPORT TO ALL PROJECTS AND PROGRAMS IN THIS PE FOR DHP-AF

D. Acquisition Strategy

Interagency Agreements and Interservice Support Agreements with the US Army, US Navy and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program -- these agreements are supplemented with Broad Area Announcement (BAA) and Intramural calls for proposal are used to award initiatives in this program and project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and/or regulatory approvals (IRB, etc.)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 309A / *Regenerative Medicine (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
309A: *Regenerative Medicine (USUHS)*	47.964	8.033	10.209	10.413	-	10.413	10.621	10.833	11.051	11.271	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Center for Neuroscience and Regenerative Medicine (CNRM) brings together the expertise of clinicians and scientists across disciplines to catalyze innovative approaches to traumatic brain injury (TBI) research. CNRM Research Programs emphasize aspects of high relevance to military populations, with a primary focus on patients at the Walter Reed National Military Medical Center.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Regenerative Medicine (USUHS)	8.033	10.209	10.413

Description: The Center for Neuroscience and Regenerative Medicine (CNRM) brings together the expertise of clinicians and scientists across disciplines to catalyze innovative approaches to traumatic brain injury (TBI) research. CNRM Research Programs emphasize aspects of high relevance to military populations, with a primary focus on patients at the Walter Reed National Military Medical Center. The CNRM has established 11 research cores and funded 119 research projects.

FY19 Accomplishments:
- Biorepositories for biomarker analysis of fluids (107,060 specimens) and neuropathology (126 brain donations), specialized for analysis of TBI in Service Members.
- Continued hosting of the annual two-day National Capital Area TBI Research Symposium with no registration fees and an average of 400 participants from the Department of Defense, the Department of Health and Human Services, the Department of Veterans Affairs, and local academic institutions to share TBI research advances and to develop collaborative interactions. The Symposium's program development is led by CNRM, with representatives from Johns Hopkins University, University of Maryland, Howard University, Virginia Commonwealth University, the University of Virginia, and Georgetown University.
- Continued hosting of the one-day center-wide Retreat attended by approximately 140 persons from CNRM and, also, leadership and staff from ten other TBI research organizations in the Washington D.C. area. The Retreat's purpose is to have CNRM's stakeholders come together to facilitate discussion, networking, and collaboration and, to create an opportunity for CNRM stakeholders to listen to and interact with TBI patients, caregivers, and advocates.
- Awarded five (5) new clinical trials:
1. Reconsolidation of Traumatic Memories to Resolve Post-Traumatic Stress Disorder
2. Improving sleep in Veterans with TBI: Integrating bright light therapy and blood-based brain biomarkers
3. Mobile Application to Counteract Depression and Concussion
4. Individualized Connectome-targeted rTMS for Depression Associated with Traumatic Brain Injury

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 309A / *Regenerative Medicine (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
5. Internet Cognitive Behavioral Therapy for TBI-related Insomnia - Awarded three (3) new strategic project cores: 1. The Neuropathology-Neuroradiology Integration Core: A partnering of the Neuropathology Core with Dr. Peter Basser's Section on Quantitative Imaging and Tissue Sciences laboratory at NIH to develop and test novel magnetic resonance imaging (MRI) approaches that could potentially identify TBI-related structural abnormalities in vivo. 2. The Translational Therapeutics Core: A state-of-the-science paradigm for the preclinical testing of traumatic brain injury (TBI) treatments intended to alleviate highly relevant post-injury symptoms experienced by Service Members. This core will work to develop a proof-of-concept complex, chronic model of TBI in mice to test the effectiveness of novel treatment options. 3. The Optimizing Ferret TBI Experiment: A standardized, complex TBI paradigm in ferrets that incorporates novel pre-and post-injury behavioral tests to evaluate changes in mood, headache, and sleep. Soon, this model will test the efficacy of candidate treatments. - Completion of the deployment of multi-modal forms of advanced imaging technology for diagnosis of TBI, with and without co-morbid PTSD, including MRI-PET, hyperacute MRI, and novel diffusion imaging techniques such as Mean Apparent Propagator. - Expansion of its research agenda to include Operational Research, which focuses on optimizing warfighter brain health in operational environments and consists of two initiatives: Monitoring Blast Exposures and Environmental Overpressure Events, and Prolonged Field Care. These initiatives explore field-based brain health concerns such as blast overpressure exposure, impact/acceleration events, and the development of countermeasures for severe brain injuries, such as subdural hemorrhage, in austere environments. - Continued involvement in the "Comprehensive Strategy and Action Plan for Warfighter Brain Health." This strategy includes six (6) lines of effort which are: Research, Surveillance and Prevention; Diagnosis, Treatment, Rehabilitation, and Reintegration; Outreach, Education, and Training; Long Term Effects of Traumatic Brain Injury (TBI); and Section 734, NDAA FY 18. The USU will lead three (3) of the Comprehensive Strategy for Warfighter Brain Health's six (6) lines of effort. These three (3) lines of effort are Research; Long Term Effects of TBI; and Section 734, NDAA FY 18. Our leadership is involved in each of these three (3) lines of effort. - Creation of the USU/NIH Traumatic Brain Injury Research Consortium (TBIRC) to unify, streamline, and ensure visibility of all TBI-related research programs within the USU's research enterprise. The creation of the TBIRC will enhance the USU's development and implementation of the initiatives within the "Comprehensive Strategy for Warfighter Brain Health." Additionally, alignment of the USU's various TBI research programs with CNRM will allow these programs to benefit from the scientific oversight and expertise of CNRM's NIH partners. Doing so will, ideally, accelerate progress to the benefit of America's warfighters and the citizens of the United States. ***FY 2020 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 309A / *Regenerative Medicine (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
CNRM objectives include: (1) Continue interdisciplinary, collaborative studies that bring together expertise across USU, WRNMMC, and intramural NIH to address the highest priority TBI research in diagnosis through treatment and recovery as relevant to military service members; (2) Continue operational capability of all Cores to provide efficient research infrastructure with high quality resources and technical expertise; (3)Develop Clinical Trials Unit and expand clinical research capability to increase the number of interventional trials ; (4) Define focus areas of next research stage and best funding format for those directions, optimize research teams, and support new research projects pending availability of FY20 funding; (5) Disseminate findings of CNRM basic, translational, and clinical research; (6) Host CNRM retreat and internal data discussions to foster cross-fertilization of expertise and innovative development across basic, translational, and clinical research; (7) Host annual research symposium to foster interaction between CNRM investigators and other local research organizations; (8) Support open data access to completed clinical studies to qualified federal and academic investigators; (9) Provide human brain and biofluids specimens for use in approved research protocols within CNRM and to other qualified federal and academic investigators; (10) Partner with other funding agencies and commercial entities to advance translation of CNRM research;(11) Support fellowship program to facilitate neuroscience and regenerative medicine research capabilities at DoD sites in NCA; (12) Participate on the Traumatic Brain Injury (TBI) Research Synergy Board (RSB) and contribute to the TBI “Unity of Effort” to strategically strengthen and accelerate TBI research on “America’s Health Campus;” (13) Utilize Biospecimen Bank of blood specimens linked to MRI and clinical assessment data in longitudinal studies of TBI patients and relevant comparison cohorts; (14) Brain Tissue Repository of brains donated from military TBI patients, including state-of-the-art neuropathological analysis of blast cases and relevant comparison cohorts; (15) Deployment of multi-modal forms of advanced imaging technology for diagnosis of TBI, with and without co-morbid PTSD, including MRI-PET, hyperacute MRI, and novel diffusion imaging techniques such as Mean Apparent Propagator; (16) Creation of Work flow pipeline for accurate and efficient analysis of neuroimaging data relevant to TBI, including quantitative analysis of microhemorrhages, traumatic meningeal injury, and white matter abnormalities; (17) Utilize multiple animal models involving multiple species for improved analysis of acute and chronic effects of TBI relevant to the warfighter, including blast exposure, repetitive injury, and stress conditions. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Price adjustment.			
Accomplishments/Planned Programs Subtotals	8.033	10.209	10.413

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 309A / *Regenerative Medicine (USUHS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0806721HP: *Uniformed Services University of the Health Sciences*	9.647	9.840	10.036	-	10.036	10.236	-	-	-	Continuing	Continuing

Remarks

Provides funding to conduct Natural History study; Infrastructure to support the CNRM program; and salaries of neuroscience faculty and technical and administrative support personnel.

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 378A / *CoE-Breast Cancer Center of Excellence (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
378A: *CoE-Breast Cancer Center of Excellence (Army)*	39.699	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Breast Cancer Center of Excellence provides a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. This approach integrates prevention, screening, diagnosis, treatment and continuing care, incorporation of advances in risk reduction, biomedical informatics, tissue banking and translational research. The project is based on a discovery science paradigm, leveraging high-throughput molecular biology technology and our unique clinically well-characterized tissue repository with advances in biomedical informatics leading to hypothesis-generating discoveries that are then tested in hypothesis-driven experiments. The objective of this research is to reduce the incidence, morbidity (illness), and mortality (death) of breast diseases and breast cancer among all military beneficiaries.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Breast Cancer Center of Excellence ***Description:*** Provides a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer-reviewed journals, revised clinical practice guidelines, incorporation into training curriculum throughout the Military Health System, and other applicable means.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 378B / *CoE-Breast Cancer Center of Excellence (USU)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
378B: *CoE-Breast Cancer Center of Excellence (USU)*	19.640	9.916	10.475	10.685	-	10.685	10.898	11.116	11.339	11.566	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Breast Cancer CoE provides a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. This approach integrates prevention, screening, diagnosis, treatment and continuing care, incorporation of advances in risk reduction, biomedical informatics, tissue banking and translational research. The project is based on a discovery science paradigm, leveraging high-throughput molecular biology technology and our unique clinically well-characterized tissue repository with advances in biomedical informatics leading to hypothesis-generating discoveries that are then tested in hypothesis-driven experiments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Breast Cancer Center of Excellence	9.916	10.475	10.685

Description: Breast Cancer CoE provides a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer.

FY19 Accomplishments:
- Accrued hundreds of breast patients to Breast CoE core protocols
- Accrued hundreds of breast patients to the ORIEN research protocol
- Acquired over 5,000 new biospecimens at our Breast COE sites to the core tissue protocol
- Utilized our biospecimens and data base in support of over 20 research studies
- Performed critical research on young women with breast cancer, and the demographic of African-American women with breast cancer, key cohorts affecting cancer as a readiness issue for the DoD
- Advanced our Immunome project to analysis and prediction model phase
- Near completion of our tumor microenvironment component of APOLLO 4 (breast) proteogenomics
- Developed additional research work with NCI regarding young women with breast cancer in relation to the active duty component

FY 2020 Plans:
The Breast Cancer CoE will identify and consent patients (to include patients at high risk for development of breast cancer) annually to the MCC ORIEN research study, with special focus on active duty females as a Force Protection / Readiness sustainment issue to the DoD. Will continue to accrue patients annually to the “core” BC-COE protocols through consenting patients in the main BC-COE clinical sites, with the main site being the Breast Center at the Murtha Cancer Center of Walter Reed NMMC, the military’s largest and only NAPBC (National Accreditation Program for Breast Centers) approved breast center in the entire DoD MHS. Will acquire through consented protocol acquisitions, over 5,000 specimens annually (neo-plastic and non-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 378B / *CoE-Breast Cancer Center of Excellence (USU)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
neoplastic breast tissues and tumors, lymph nodes, metastatic deposits, blood and its components, bone marrow) on patients with all types of breast diseases and cancer. Will bank these biospecimens in the BC-COE Biorepository as the substrate for all molecular analyses carried out in BC-COE labs, as outlined in the BC-COE Core Protocols. Will utilize the repository as the basis for intramural and extramural collaborations for secondary usage research. Will continue to conduct integrative profiling research, for protein-expression based, clinically relevant breast cancer stratification on active case IHC assays of a panel of 20 ImmunoHistoChemical (IHA) biomarker and IHC assays of a panel of 27 biomarkers named Connectivity Map EnHigh Density TMA analysis of biomarkers associated with the development of endocrine resistance. Will continue to focus breast cancer studies on two special patients groups bearing poor outcomes, who are enriched in the military active-duty military population: young women, and African American women. Will continue to conduct breast cancer heterogeneity studies, including cellular heterogeneity of tumor development environment and lineage heterogeneity within one physical cancer tumor. Focus areas will be (Breast Cancer Immunome, identification of molecular factors in tumor epithelium and stroma contributing to tumor etiology and breast cancer tumor heterogeneity study through Whole Genome Sequencing. Will conduct studies on mechanistic understanding of breast cancer development from other perspectives, including genetic dispositions, exposure to environmental risks, access to healthcare, and impact of certain life style factors as well as comorbidities. Will continue to conduct breast cancer drug target studies focusing on the triple negative and HER2 subtypes, using 2D and 3D tissue culturing systems and human breast cancer tissues, respectively. Will further develop the informatics infrastructure system to support the evolving needs of Breast Cancer-COE research which will include developing the replacement system for the Clinical Laboratory Workflow System that was implemented years ago, develop and improve data QA programs and SOPs and improve the Data Warehouse for Translational Research by integrating data generated by internal scientists, through collaborations, and those available in the public as needed to facilitate integrative data analysis. The Breast Cancer COE will also continue its Collaborative Translational Research Program. CBCP will fund breast specific collaborative research that addresses problems with translational potential with a focus on environmental factors and the tumor microenvironment. The translational research program will consist of numerous investigators pursuing basic research on breast specific cancer etiology and biology or translational cancer research studies. CBCP will seek to establish support of novel intramural research that has the potential to improve breast cancer outcomes. The goal is to promote collaborative translational research efforts among translational science laboratories at the Clinical Breast Care Project, WRNNMC-MCC, WRI and NCI. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020 ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	9.916	10.475	10.685

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 378B / *CoE-Breast Cancer Center of Excellence (USU)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer-reviewed journals, revised clinical practice guidelines, incorporation into training curriculum throughout the Military Health System and other applicable means.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 379A / *CoE-Gynecological Cancer Center of Excellence (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
379A: *CoE-Gynecological Cancer Center of Excellence (Army)*	34.939	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Gynecological Cancer Center of Excellence focuses on characterizing the molecular alterations associated with benign and malignant gynecological disease and facilitates the development of novel early detection, prevention and biologic therapeutics for the management of gynecological disease. The objective of this research is to reduce the incidence, morbidity (illness), and mortality (death) of gynecological diseases among all military beneficiaries.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Gynecological Cancer Center of Excellence (Army) ***Description:*** The Gynecological Cancer Center of Excellence focuses on characterizing the molecular alterations associated with benign and malignant gynecological disease and facilitates the development of novel early detection, prevention and novel biologic therapeutics for the management of gynecological disease.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer-reviewed journals, revised clinical practice guidelines, incorporation into training curriculum throughout the Military Health System, and other applicable means.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 379B / *CoE-Gynecological Cancer Center of Excellence (USU)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
379B: *CoE-Gynecological Cancer Center of Excellence (USU)*	17.169	8.668	9.158	9.341	-	9.341	9.528	9.719	9.913	10.111	Continuing	Continuing

Note

The Gynecologic Cancer Center of Excellence (GYN-COE) utilizes a program project type of strategy with overarching objectives to advance knowledge, prevention strategies, companion biomarkers and assays, treatments and interventions across the continuum of care in gynecologic oncology. Our twelve program projects run in parallel rather than in sequence with advances implemented over five years rather than 12 months. Some subprojects target discovery investigations and mechanistic studies whereas others focus on clinical evaluations, population studies and further development leading to deployment. The introduction of new subprojects and maturation of other subprojects allows the GYN-COE to continue to emphasize military and clinical relevance, prioritize bench to bedside translation, and infuse in advances in science, medicine and technology to meet our objectives.

A. Mission Description and Budget Item Justification

The Gynecological Cancer Center of Excellence focuses on characterizing the molecular alterations associated with benign and malignant gynecological disease and facilitates the development of novel early detection, prevention and novel biologic therapeutics for the management of gynecological disease. The objective of this research is to reduce the incidence, morbidity (illness), and mortality (death) of gynecological diseases among all military beneficiaries.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Gynecological Cancer Center of Excellence	8.668	9.158	9.341
Description: The Gynecological Cancer Center of Excellence focuses on characterizing the molecular alterations associated with benign and malignant gynecological disease and facilitates the development of novel early detection, prevention and novel biologic therapeutics for the management of gynecological disease. FY19 Accomplishments: - 34 Peer-Reviewed Publications - 16 Invited Lectures / Presentations - 2 Book Chapters - 24 Abstracts presented: SGO 49th Annual Meeting on Women's Cancer® in New Orleans, LA from March 23-27, 2018 (6); American Association for Cancer Research Annual Meeting in Chicago IL from April 14-18, 2018 (2); 66th ASMS Conference, San Diego, CA, June 4-8, 2018 (1); 2018 Military Health System Research Symposium at the Gaylord Convention Center in Kissimmee FL on August 20-23,			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 379B / *CoE-Gynecological Cancer Center of Excellence (USU)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
2018 (5); 2018 American College of Obstetricians and Gynecologists Armed Forces District Meeting in Honolulu, HI in September 2018 (3); SGO 49th Annual Meeting on Women's Cancer® in Honolulu, HI in March 16-19, 2019 (7). ***FY 2020 Plans:*** The FY2020 program will continue to develop novel strategies for prevention, early detection, and precision treatment of gynecologic cancers by identifying molecular alterations in these diseases. We will deeply interrogate ovarian and uterine cancer looking at the complex interplay of tumor cells and the surrounding stroma (or physiologic niche) that supports carcinogenesis (the initiation, progression, and metastatic spread of cancer) as well as the molecular landscape of primary versus metastatic disease. These investigations will facilitate development of clinical biomarkers and assays for gynecologic malignancies throughout the spectrum of care and improve early diagnosis and clinical care. Beyond the above studies, we will continue to build on studies examining molecular determinants of recurrent versus non-recurrent disease and how distribution or disease and post-surgical tumor residual influences outcome. Deep proteogenomic analyses will extend current state of the art to reveal clinically actionable data to improve readiness by earlier detection and prevention of disease in the active duty force and decrease the economic burden of disease in the MHS which his typically diagnosed at late stages and treated without great specificity. We will expand collaborations in investigations of racial and ethnic disparities, risk, outcome, natural history, lifestyle, staging and treatment in cancer including gynecologic malignancies. Under the broad umbrella of outreach and patient reported outcomes research, an overarching goal during this period is to advance patient awareness, education, support and survivorship to improve quality of life, patient experience and mitigate effects. These efforts enhance the experience of care, ensure readiness of the fighting force, and improve beneficiary health adding value while decreasing cost for the Department of Defense. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing Adjustment.			
Accomplishments/Planned Programs Subtotals	8.668	9.158	9.341

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer-reviewed journals, revised clinical practice guidelines, and into training curriculum throughout the Military Health System, and other applicable means.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 381A / *CoE-Integrative Cardiac Health Care Center of Excellence (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
381A: *CoE-Integrative Cardiac Health Care Center of Excellence (Army)*	20.780	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Integrative Cardiac Health Center of Excellence (Army), also known as the Integrative Cardiac Health Project (ICHP), the focus is the investigation of cutting edge patient-centric approaches to cardiovascular disease (CVD), risk assessment and risk reduction by incorporating biomolecular (pertaining to organic molecules occurring in living organisms) research to detect CVD at an early stage, and identifying markers of increased risk for heart attack in Service members. Using a systems biology outcomes research approach, ICHP characterizes relationships between CVD, other cardio-metabolic disease states and maladaptive lifestyle behavior patterns unique to Service members such as pre-diabetes, stress, obesity and sleep disorders with the aim of targeting these disorders in their pre-clinical phase and achieving ideal/optimal cardiovascular health goals outlined by the American Heart Association. ICHP's ultimate goal is to translate the evidence-based research findings for application into clinical practice in an effort to achieve the following research aims: (1) improve Force Health by better understanding the CVD risk susceptibility of military-specific populations such as Wounded Warriors through leading-edge research using novel tools and technologies, (2) investigate and create transformational models of healthcare delivery through personalized CVD prevention tracks as an adjunct to traditional care, and (3) refine individualized prevention strategies through statistical data modeling to define the most cost-effective and sustainable approaches in promoting cardiovascular health throughout the military lifecycle.

The focus is the investigation of cutting edge patient-centric approaches to cardiovascular disease (CVD), risk assessment and risk reduction by combining bimolecular research with lifestyle change strategies to detect CVD at an early stage, and identifying markers of increased risk for heart attack in Service members.

No funding programmed. Beginning in FY19, the ICHP funding line is transferred from the Army to USUHS Project 381.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer reviewed journals, revised clinical practice guidelines, and training of residents and fellows in the Military Health System

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 382A / *CoE-Pain Center of Excellence (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
382A: *CoE-Pain Center of Excellence (Army)*	6.436	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Pain Center of Excellence (Army) examines the relationship between acute and chronic pain and focuses on finding, implementing, and evaluating the most effective methods of relieving the acute pain caused by combat trauma and the effect pain has throughout the continuum of care to rehabilitation and reintegration. The Pain Center of Excellence is an integral part of the Defense and Veterans Center for Integrative Pain Management whose mission is to become a referral center that supports world-class clinical pain services, provides education on all aspects of pain management, coordinates and conducts Institutional Review Board-approved clinical research and Institutional Animal Care and Use Committee-approved basic laboratory and translational pain research, and serves as the advisory organization for developing enterprise-wide pain policy for the Military Health System. In FY 2015, the Pain CoE funding line is transferred from Army to USUHS.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Pain Center of Excellence (Army)	0.000	-	-
Description: The Pain Center of Excellence examines the relationship between acute and chronic pain and focuses on finding, implementing, and evaluating the most effective methods of relieving the acute pain caused by combat trauma and the effect pain has throughout the continuum of care to rehabilitation and reintegration.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer-reviewed journals, revised clinical practice guidelines, incorporation into training curriculum throughout the Military Health System, and other applicable means.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 382B / *CoE-Pain Center of Excellence (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
382B: *CoE-Pain Center of Excellence (USUHS)*	10.901	3.202	3.376	1.945	-	1.945	2.014	2.084	2.156	2.229	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Pain Center of Excellence examines the relationship between acute and chronic pain and focuses on finding, implementing, and evaluating the most effective methods of relieving the acute pain caused by combat trauma and the effect pain has throughout the continuum of care to rehabilitation and reintegration. The Pain Center of Excellence is an integral part of the Defense and Veterans Center for Integrative Pain Management (DVCIPM) whose mission is to become a referral center that supports world-class clinical pain services, provides education on all aspects of pain management, coordinates and conducts Institutional Review Board-approved clinical research and Institutional Animal Care and Use Committee-approved basic laboratory and translational pain research, and serves as the advisory organization for developing enterprise-wide pain policy for the Military Health System. In FY 2015, management of the Pain CoE was transferred from Army to USUHS.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Pain Center of Excellence (USUHS)	3.202	3.376	1.945

Description: The Pain Center of Excellence examines the relationship between acute and chronic pain and focuses on finding, implementing, and evaluating the most effective methods of relieving the acute pain caused by combat trauma and its impact on rehabilitation and recovery.

FY19 Accomplishments:
Obtained approval for the DVCIPM Pain BioBank. The Pain Registry Biobank is a clinical data registry and tissue biobank for the advancement of pain-related research. This Biobank contains PASTOR survey data, the Defense and Veterans Pain Rating Scale (DVPRS), electronic health record data, and biospecimens, (blood and saliva) on targeted individuals eligible for care within the Military Health System. Specimens are being processed in collaboration with the Center for Neuroscience and Regenerative Medicine (CNRM) laboratory.

In addition to the DVCIPM site at Madigan Army Medical Center, additional study sites were established at Naval Medical Center San Diego and Joint Base San Antonio. Staff at these locations are seeking approval for the Pain Biobank Registry project.

Set up Cooperative Research and Development Agreement's (CRADA) with the University of Washington, Virginia Tech, University of New Mexico and facilitated the development and implementation of PASTOR, through a CRADA at West Virginia University Medical Center. Additionally, the Defense & Veterans Pain Rating Scale (DVPRS) has been integrated into clinical practice and research outside of the DoD. Examples include the Durham VA, and West Virginia University and American Society of Acupuncturists, who rebranded the DVPRS with their own logos.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 382B / *CoE-Pain Center of Excellence (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Obtained several grants including a CDMRP Peer-Reviewed Medical Research Program grant targeting biomarkers of chronic pain maintenance and recovery, and one examining integration of massage therapy services into primary care. Obtained funding to execute and evaluate a pilot program, adapting the Joint Pain Education Program (JPEP) for online continuing medical education, across the National Capital Region. Developed and piloted a Opioid Overdose Education & Naloxone Distribution (OEND), which is now included, in part, in the Stepped Care Model training and is currently being planned for a scaled-up, enterprise-wide roll-out. Established a Memorandum of Agreement with the Defense Health Agency to collaborate on education, training, and research related to pain management and opioid risk reduction in the DoD. Established and maintained collaborations in DHA, providing on-going subject matter expertise and analytics. Facilitated the expansion of PASTOR to include new users and military treatment facilities and the roll-out of the Stepped Care Model for Pain. DVCIPM became a voting member on the DHA Pain Clinical Support Service. Published the Acute Pain Medicine Text Book which was written and edited under the auspices of Oxford Press and the American Academy of Pain Medicine's Shared Interest Group. Acute Pain Medicine is the first comprehensive, case-based text of its kind that explores the essential topics of acute pain medicine, including interventional, pharmacologic, and diagnostic considerations ***FY 2020 Plans:*** The DVCIPM will continue to focus on further building and streamlining the Pain Assessment Screening Tool and Outcomes Registry (PASTOR) and apply for funding for data analysis. Continue to foster collaborative relationships and focus on complementary and integrative pain management (CIPM) through clinical assimilation studies of modalities such as: battlefield acupuncture (BFA); yoga and massage; evaluation of novel analgesics; and interventional technologies for improved pain management. DVCIPM will seek additional funding to sustain the Pain Education Program, as well as support the increasing requirements for the MHS DVCIPM's designation as a MHS CoE, and DVCIPM's recognized track record of effective facilitating collaborations across the Uniformed Services, VA, and Civilian Medicine has resulted in an ever-growing number of tasks. ***FY 2021 Plans:*** FY 2021 Plans continue efforts as outlined in FY 2020. Efforts will be scaled back as funds were adjusted to higher priority programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 382B / *CoE-Pain Center of Excellence (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
As a result of internal decisions, $10M of PE 0603115 ($1.5M in Project Code 382B) was re-prioritized which reduced research funding in the areas of health services delivery improvement, pain management and alternatives to opioids, cardiac health, and the development of technologies supporting warfighter health and recovery.			
Accomplishments/Planned Programs Subtotals	3.202	3.376	1.945

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer-reviewed journals, revised clinical practice guidelines, incorporation into training curriculum throughout the Military Health System, and other applicable means.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 383A / *CoE-Prostate Cancer Center of Excellence (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
383A: *CoE-Prostate Cancer Center of Excellence (USUHS)*	49.072	7.921	8.359	8.526	-	8.526	8.696	8.870	9.047	9.228	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Center for Prostate Disease Research (CPDR) is an interdisciplinary translational cancer research program of the Department of Surgery, Uniformed Services University of the Health Sciences (USU), the Walter Reed National Military Medical Center (WRNMMC), the Murtha Cancer Center, and the Urology Service at WRNMMC. The CPDR conducts state-of-the-art clinical and translational research with emphasis on precision medicine to enhance the readiness of active duty personnel juxtaposed with the continuum of medical care for military retirees and beneficiaries. The CPDR enriches the training of the next generation of physicians/ scientists who directly benefit the quality, outcomes, and stability of the military health care delivery system. Ground-breaking discoveries through strong academic and clinical research; e.g., over 24 yrs. and 450 publications) have led to major advances in translational prostate cancer research and treatment. The CPDR integrates expertise of urologic and medical oncologists, cancer biologists, genitourinary pathologists, epidemiologists, bio-statisticians, medical technologists, research nurses, patient educators, bioinformaticians, and program management specialists. All these areas of expertise provide state-of-the-art resources for in-house and collaborative research in prostate cancer. The program is also committed to translational research training for future generations of physicians and scientists at leading DoD medical institutions (USU, WRNMMC, JPC, NMCSD, MAMC, SAMMC, and TAMC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: CoE-Prostate Cancer Center of Excellence (USUHS)	7.921	8.359	8.526
Description: The CPDR is at the forefront of "cutting-edge" clinical, basic science and epidemiologic research. The emphasis is on improving diagnosis, prognosis and treatment of prostate cancer involving new modalities such as MRI guided biopsy, gene-based biomarkers, and precision medicine strategies targeting causal gene alterations in prostate cancer. The CPDR multi-center database is a unique programmatic resource, enrolling over 27,500 DoD health care beneficiaries under suspicion for prostate cancer, with longitudinal follow up to 23 years. This database continues to highlight emerging issues in prostate cancer management such e.g., treatment outcomes, racial/ethnic differences, quality of life and discovery of novel molecular prognostic markers. In light of current issues related to overtreatment of early detected prostate cancers and poorly understood biology of prostate cancer, CPDR's long-term biospecimen banks, high-impact discoveries and collaborations are leading towards better diagnostic and prognostic molecular markers and therapeutic targets with promise in improving the management of the disease. The CPDR's health disparity research focus has uniquely benefited from studying a prostate cancer patient cohort, with a high representation of African American men, in an equal-access military health care system. Ground-breaking studies of the most validated prostate cancer gene, ERG, in over 1,500+ patients provide the first definitive information on prostate cancer biology underscoring racial/ethnic differences with potential to enhance personalized medicine. The CPDR's state-of-the-art research infrastructure and framework is providing education and training for over 100 next generation physicians, scientists, medical and graduate students within DoD medical institutions.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 383A / *CoE-Prostate Cancer Center of Excellence (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Accomplishments (FY19): • Renewed infrastructure (research laboratory and CAP-certified biospecimen bank) to enhance translational research within the equal access healthcare of the DoD • Introduced new and continued successful immunotherapy clinical trials, such as, ProstAtak vaccine trial as adjuvant for localized disease and for intermediate risk prostate cancer and began autologous cellular immunotherapy for active surveillance patients • Continued the TRUMPET clinical trial for castration-resistant prostate cancers which assesses the effectiveness of treatment sequencing. Evaluated Rucaparib therapy of metastatic castration-resistant prostate cancers with BRCA 1 / 2, ATM, or CHEK mutations • Continued the Multi-disciplinary Prostate Cancer CoE/NCI clinics to determine treatment strategies based on cutting-edge clinical trials • Evaluated the predisposing germline mutation BRCA1/2 for aggressive prostate cancer for improved therapeutic stratification to enhance therapy (Petrovics et al., PCPD 2018) • Completed the assessment of new and more potent derivatives of the small molecule inhibitor ERGi-USU with potential impact on precision medicine/targeted therapy for ERG positive cancers (Mohamed, Xavier et al., Cancer Research 2018) • Provided new insights into the tumor suppressor function of LSAMP gene, frequently deleted in prostate cancers of African American men (Babcock et al., AACR 2019) • Continued focus on racial differences in prostate cancer to develop more precise urine-based biomarkers • Assessed predictors of disease progression, including: intensity of PSA screening history, comorbidity, and race-treatment interactions • Conducted multiple studies to improve clinical risk stratification and better tailored treatment by complementing pathologic patient features with molecular data Knowledge Products (FY19 - 9 Publications); Podium Presentations (FY19 - 7 Presentations); Poster Presentations (FY19 – 11 Presentations) Materiel Products (FY19) U.S. Issued Patent No.: US 10,238,639 B2, date of patent: March 26, 2019. Azophenols as ERG Oncogene Inhibitors U.S. Published Patent Application No.: US 2018/0024132 A1, date: January 25, 2018. Lipid, Protein, and Metabolite Markers for the Diagnosis and Treatment of Prostate Cancer U.S. Provisional Applications No.: 62/867/029 filed on June 26, 2019: Markers for the Diagnosis of Prostate Cancer			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 383A / *CoE-Prostate Cancer Center of Excellence (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
No.: 62/779,035 filed on December 13, 2018: Genomic Rearrangements Associated with Prostate Cancer and Methods of Using the Same ***FY 2020 Plans:*** Precision Medicine Focus: Continue to leverage long term assets of DoD patient database (30K subjects with up to 25 yrs of follow up) and biospecimen bank (230K aliquots) towards delineation of molecular markers to enhance treatment decisions through precision medicine with emphasis on racially diverse patients in equal access military healthcare system. Define prostate cancer prevention strategies by addressing the role of predisposing conditions, military-specific exposures, and genetic components in prostate cancer onset and progression of service members. Validate prediction models for disease progression, quality of life, and overall survival across the spectrum of cancer treatments and determine factors that predict definitive treatment for patients initially managed on active surveillance. Develop modalities for diagnosing and prognosing clinically significant prostate cancers to reduce over diagnosis and treatment, through molecular/clinico-pathologic prognostic signatures of MRI-ultrasound fusion image guided biopsy specimens. Enhance pre/post-operative follow-up for cancer diagnosis, progression, pain, mobility deficits and restoration of function through the CoE's long-term database. Continue to strengthen the Cancer Moonshot and APOLLO prostate cancer proteogenomics discovery and targeted therapy focus under the Murtha Cancer Center aligned with the national cancer precision medicine initiatives. Validate prognostic biomarker panels developed from biofluid-based metabolome, proteome and lipidome analyses addressing the limitations of currently used serum PSA diagnostic test in multi-center validation setting. Health Disparity Research: Continue to lead discoveries of prostate cancer causing genes for diagnosing, prognosing and targeted therapy of racially diverse DoD prostate cancer patients with indolent and aggressive disease. Leverage established key collaborations with DoD academy and industry to integrate whole genome, whole-transcriptome sequencing, proteome, lipidome and metabolome analyses on a large CPDR cohort of African American and Caucasian American patients. Delineate the prostate cancer genomic landscape of under studied African American, Asian and Hispanic patients towards the development of broadly applicable diagnostic, prognostic markers and treatment approaches. Develop innovative experimental models for establishing the mechanisms of newly discovered race/ethnicity associated prostate cancer genes towards ethnicity-informed therapeutic strategies. Continue to leverage established collaborations with NCI investigators addressing race/ethnicity associated genetic predisposition for metastatic prostate cancer. Development of Molecular Diagnostic and Prognostic Tools:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 383A / *CoE-Prostate Cancer Center of Excellence (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Strengthen the CoE's unique DoD prostate cancer research resources by employing advanced informatics and logistic platforms for enhancing the integration of clinical, biospecimen and molecular databases towards the development of diagnostic and prognostic tools. Validate in multi-center setting the prognostic utility of CoE developed prostate cancer biomarkers including urine exosome-based mRNA panels, serum multi-omics based panels, cytogenetic tests and the ERG monoclonal antibody (e.g., urine exosomes clinical trial in collaboration with the Exosome Diagnostics Inc.). Continue to enhance knowledge of prostate cancer driver genes as exemplified by CoE leadership in the discovery/delineation of biological function and biomarker/ therapeutic utility of the most common prostate cancer gene, ERG. Expand the research on serum and urine based protein and omics-defined biomarkers including serum antigen- autoantibody-based and mass spectrometry-based detections. Novel Strategies for Stratification and Treatment of Prostate Cancers: Continue to employ state-of-the-art clinical trials and research evaluating novel therapies for androgen axis inhibitors and immuno/ radiation therapy complemented by emerging approaches targeting newly discovered prostate cancer driver gene alterations (e.g., ERG and DNA repair gene defects). Evaluate strategies for enhancing immunotherapy of advanced prostate cancer. Complete developments of new small molecule ERG inhibitors in collaboration with Stanford Medical School to enter Phase I clinical trials. Develop innovative cell culture, engineered mouse models and tumorigenicity models for defining the mechanisms of prostate cancer driver genes with the objective of discovering new therapeutic opportunities. Leverage newly developed concepts of combination therapies targeting adaptive mechanisms of prostate cancer progression, e.g., androgen receptor (and its modulator, PMEPA1) in combination of TGF-beta inhibitors or NOTCH1 inhibitors in the context of early stage and advanced disease. Develop multi-center evaluation of the CPDR androgen receptor function index (ARFI) gene panel towards earlier and more effective stratification of patients for androgen axis targeting drugs. Education and Training Program: Leverage the strong track record in translational research training of the next generation of physicians, researchers, medical researchers at DoD institutions, e.g., WRNMMC urology residents, post-doctoral fellows, USU Capstone medical and graduate students. Enhance patient education focusing on quality-of-life, active surveillance and new treatment opportunities and integration with patient support groups.			
FY 2021 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 383A / *CoE-Prostate Cancer Center of Excellence (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	7.921	8.359	8.526

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 398A / *CoE-Neuroscience Center of Excellence (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
398A: *CoE-Neuroscience Center of Excellence (USUHS)*	3.679	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

Note

The Center for Excellence in Neuroscience Project is closed. All future projects will be supported by This project was consumed under the Center for Neuroscience and Regenerative Medicine (CNRM).

The Military Clinical Neuroscience Center of Excellence (MCNCoE) is to improve prevention, diagnosis, and treatment of neurological disorders that directly affect warfighters through a multi-site research program that collaborates broadly with military, civilian and federal medical institutions. The MCNCoE's approach to its goals includes supporting the research potential of military treatment facilities across the DOD system as well as the national capital area, and facilitating a network of collaborations between investigators across these facilities.

A. Mission Description and Budget Item Justification

For the Uniformed Services University of the Health Sciences (USUHS), the Military Clinical Neuroscience Center of Excellence (MCNCoE), formerly a Congressional Special Interest program, was chartered in 2002 to conduct basic, clinical, and translational research studies of militarily relevant neurological disorders affecting U.S. service members and military beneficiaries. The Center's mission is to improve prevention, diagnosis, and treatment of neurological disorders that directly affect warfighters through a multi-site research program that collaborates broadly with military, civilian and federal medical institutions. The MCNCoE goals include supporting neuroscience education and research endeavors at military treatment facilities across the DOD healthcare system and facilitating a network of collaborations between investigators across these facilities.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 429A / *Hard Body Armor Testing (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
429A: *Hard Body Armor Testing (Army)*	1.356	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

The Hard Body Armor project plans to develop a surface-mounted sensor system that will add critical dynamic data to the current clay test procedure and develops human skull fracture injury criteria for focused blunt impacts to the human head. This research develops and validates a method for assessing body armor performance against blunt trauma and will be fully compatible with the current testing method. The adoption of armor and helmet design standards that estimate injury type and severity based on biomechanics will allow designers to rationally create armor and helmets that protect each body region and allow the development of standards based on true protection outcomes.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Hard Body Armor ***Description:*** Develop a surface-mounted sensor system that will add critical dynamic data to the current clay test procedure and develops human skull fracture injury criteria for focused blunt impacts to the human head.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate to the DoD testing community an improved biofidelic blast test manikin (model with characteristics that mimic pertinent human physical ones such as size, shape, mass)that includes the capability to measure and predict skeletal occupant injury during under body blast events in combat and transport vehicles involving a landmine or improvised explosive device.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 431A / *Underbody Blast Testing (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
431A: *Underbody Blast Testing (Army)*	48.611	10.800	9.200	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

To better protect mounted warriors from the effects of underbody blast (UBB) caused by landmines or Improvised Explosive Devices (IEDs), UBB Testing medical research project will provide new data on the biomechanics of human skeletal response that occurs in an attack on a ground combat vehicle. The data will provide a biomedical basis for the development of a Warrior-representative blast test manikin (the Warrior Injury Assessment Manikin or WIAMan project) and the required biomedically-valid injury criteria that can be used in Title 10 Live Fire Test and Evaluation (LFT&E) to characterize dynamic events, the risk of injury to mounted warriors, and to support acquisition decisions. This new data will also benefit the overall DoD effort in vehicle and protection technology for the UBB threat. This work is needed to overcome the limitations of the current test manikin and injury criteria which were designed for the civilian automotive industry for frontal crash testing and as such are not adequate in the combat environment. The current manikins do not represent the modern Warrior and were not designed for the vertical acceleration environment associated with UBB events. Consequently, current LFT&E crew survivability assessment methodologies are limited in their ability to predict the types and severity of injuries seen in these events. Due to this technology gap, military ground vehicles are being fielded without fully defined levels of injury risk and crew survivability for UBB events. The data produced by this project will be used to satisfy a critical need for a scientifically valid capability for analyzing the risk of injury caused by UBB.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Underbody Blast Testing	10.800	9.200	0.000
Description: Testing will provide an understanding of the biomechanics of skeletal injuries that occur in a combat vehicle UBB event involving a landmine or IED, and the biomedical basis for the development of a Warrior-representative blast test manikin and associated biomedically-validated injury criteria that can be used to characterize dynamic events and injury risks for LFT&E crew survivability assessments and vehicle development efforts to better protect Warriors from UBB threats.			
FY 2020 Plans: Human Injury Probability Curves, Injury Assessment Reference Curves, and Female cadaver testing will be completed and the WIMAN research team will report on ways to account for female skeletal properties in the ATD. WIAMan Post-Mortem Human Subject data will be cataloged and stored at the Army Research Lab Engineering Analysis Branch (EAB) for Verification, Validation and Accreditation activities for Live Fire vehicle testing. Data sharing will be coordinated with medical research labs.			
FY 2021 Plans: Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 431A / *Underbody Blast Testing (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	10.800	9.200	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Produce BRC and human injury probability curves for human skeletal response and tolerance in the military UBB environment and transition them to the Program Execution Office for Simulation, Training and Instrumentation for use in the development of the WIAMan UBB test manikin and for general use in the research, development, test and evaluation community. Develop injury assessment reference curves for use with WIAMan manikin to support vehicle and protection technology acquisition decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 448A / *Military HIV Research Program (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
448A: *Military HIV Research Program (Army)*	31.454	7.185	7.877	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project funds research to develop candidate Human Immunodeficiency Virus (HIV) vaccines, to assess their safety and effectiveness in human subjects, and to protect the military personnel from risks associated with HIV infection. All HIV technology development is conducted in compliance with U.S. Food and Drug Administration (FDA) regulations. Evaluations in human subjects are conducted to demonstrate safety and effectiveness of candidate vaccines, as required by FDA regulation. Studies are conducted stepwise: first, to prove safety; second, to demonstrate the desired effectiveness of the vaccine in a small study (to demonstrate early proof-of-concept); and third, to demonstrate effectiveness in large, diverse human population clinical trials. All results are submitted to the FDA for evaluation to ultimately obtain approval (licensure) for medical use. This project supports studies for effectiveness testing on small study groups after which they transition to advanced developers for completion of effectiveness testing in larger populations. This program is jointly managed through an Interagency Agreement between the U.S. Army Medical Research and Materiel Command and the National Institute of Allergy and Infectious Diseases. This project contains no duplication with any effort within the Military Departments or other government organizations. The cited work is also consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology focus areas.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military HIV Research Program	7.185	7.877	0.000
Description: The Military HIV Research Program aims to develop candidate HIV vaccines, to assess their safety and effectiveness in human subjects, and to protect the military personnel from risks associated with HIV infection. In addition, program also aims to develop other prevention and treatment strategies to mitigate the HIV epidemic globally. This project down-selects one or more vaccine candidates that are optimized through pre-clinical studies in non-human primates and conducts human clinical trials in Africa, Asia and the U.S. to test for safety and immunogenicity (ability to invoke an immune response), and early proof of concept efficacy testing.			
FY 2020 Plans: The Military HIV research program is conducting Early Capture HIV Cohort studies in Europe and Asia with the purpose of characterizing recruitment, retention, HIV prevalence, HIV incidence and biological characteristics of acute HIV infection in high risk volunteers. Human population studies in Asia, Europe and West Africa are being conducted to provide knowledge about the earliest HIV events to inform vaccine development. Human clinical trials in Africa, Asia and the U.S. designed to test for safety,immunogenicity and early proof of concept efficacy of candidate vaccines are ongoing.			
FY 2021 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 448A / *Military HIV Research Program (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	7.185	7.877	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Mature and demonstrate candidate HIV vaccines, prepare and conduct human clinical studies to assess safety and effectiveness of candidate HIV vaccines. All HIV technology development activities will be conducted in compliance with FDA regulations. Best selected candidates will be transitioned to advanced development through Milestone B.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 830A / *Deployed Warfighter Protection (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
830A: *Deployed Warfighter Protection (Army)*	34.106	5.713	6.345	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Armed Forces Pest Management Board (AFPMB), the Deployed Warfighter Protection project plans to develop new or improved protection for ground forces from disease-carrying insects. The focus of this program is to develop new or improved systems for controlling insects that transmit malaria, dengue, chikungunya and other emerging infectious diseases under austere, remote, and combat conditions; understand the physiology of insecticidal activity to develop new compounds with greater specific activity and/or higher user acceptability; examine existing area repellents for efficacy and develop new spatially effective repellent systems useful in military situations; develop new methods or formulations for treating cloth to prevent vector biting; and expand the number of active ingredients and formulations of public health pest pesticides, products and application technologies available for safe, and effective applications. The AFPMB partners with the President's Malaria Initiative and the World Health Organization Global Malaria Program to lead development of new tools for insect-borne disease prevention.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Deployed Warfighter Protection	5.713	6.345	0.000
Description: The Deployed Warfighter Protection project will develop new or improved protection for ground forces from disease-carrying insects. ***FY 2020 Plans:*** The Deployed Warfighter Protection research project continues to conduct translational research to develop and field tools that protect against emerging infectious disease threats and enable deployed forces to enhance protection from biting insects, primarily mosquitoes and sand flies, which transmit force degrading diseases. The AFPMB Vector Control Capabilities Gap Analysis (completed in FY 2016) will continue to be used to inform the development of functional and performance requirements for future acquisition programs. In addition, the AFPMB continues to develop the necessary test and evaluation plans to determine a candidate product's ability to meet its stated requirements. ***FY 2021 Plans:*** Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	5.713	6.345	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 830A / *Deployed Warfighter Protection (Army)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Develop, mature and field new or improved products and strategies that protect U.S. forces from disease-carrying insects. Identify acquisition-based research and development requirements in a Capability Needs Assessment. Refine target product profiles and performance criteria. Secure registered trademarks, patents, commercial partners, and/or EPA registration of new or improved insecticides, application technologies and repellent systems. Continue to partner with industry to field products and coordinate with the Services, AFPMB, USAMMDA, DLA and relevant Program Executive Offices to transition efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 478 / *Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
478: *Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)*	14.766	14.237	18.556	18.640	-	18.640	18.724	19.098	19.480	19.870	Continuing	Continuing

A. Mission Description and Budget Item Justification

DoD Cancer Moonshot - Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)

DoD's Cancer Moonshot requirement is a mission of the Murtha Cancer Center (MCC) at USU under the authority of a tri-federal Memorandum of Agreement signed July 2016 by the Acting Assistant Secretary of Defense for Health Affairs (DoD), the Under Secretary of Health, Department of Veterans Affairs(VHA), and the Acting Director of the National Cancer Institute (NIH), for a tri-federal program of Clinical Proteogenomics Cancer Research. DoD's Cancer Moonshot promotes readiness and mission accomplishment of the active duty service member (ADSM) force, as well as military beneficiaries, retirees, and veterans. There are about 1,000 ASDMs who are stricken with a new cancer diagnosis annually, and MCC serves as the DoD's Health Affairs-approved Center of Excellence for cancer care and research for these ADSMs. MCC's mission is to bring translational cancer research to all patients in order to improve their health and mission performance, and to help prevent, screen, detect, and treat cancer; minimize side effects of cancer treatments;, and return to duty ADSMs stricken with cancer, as well all other DoD beneficiaries. DoD's Cancer Moonshot initiative allows for the provision of state-of-the-art molecular analysis of tumors and blood of cancer patients which will result in increased force readiness through more targeted treatment of cancers with fewer side effects, as well as better screening for cancer risk and development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: DoD Cancer Moonshot - Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)	14.237	18.556	18.640
Description: Description: DoD's Cancer Moonshot at USU's MCC is a research program consisting of two overall projects, the first known as APOLLO (Applied Organizational Learning and Outcomes), and the second as DoD Framingham. APOLLO is a novel high-throughput molecular analysis of every DNA (gene), RNA, and protein expression molecule in cancer patient tumors. Such analysis has never been done on a large scale across multiple cancer types, and small pilot studies demonstrate that the APOLLO project will result in unprecedented findings across all types of cancer (with specific focus on cancers of the greatest threat to ASDMs). These new findings will be identified by using state-of-the-art tissue collection procedures in the operating rooms of all patients undergoing cancer surgery at MCC collection protocol sites (e.g.. Walter Reed NMMC;NMC Portsmouth; NMC San Diego; Womack AMC; Keesler AFB) and, then, sequencing the entire DNA genome and RNA sequence at USU, while analyzing the entire protein expression profile of these same cancers in MCC's Proteomics Laboratory, as well as other affiliated protein laboratories. The vast molecular data that will be derived from these analyses (in the terabyte			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 478 / *Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021

and petabyte range and beyond) will be linked to clinical patient data as well as treatment outcomes data. These combined data sets will be housed in National Cancer Institute (NCI) secure cloud-based servers with restricted access for analytics by teams of bioinformatics experts (i.e., from government, university, and corporate entities) across the United States working on this endeavor. This complete bio molecular (global) expression profiling of thousands of cancers of all types seen in military treatment and other facilities will predictably result in a myriad of new discoveries regarding the way cancers develop, progress, respond to treatment, evade treatment, and spread. It also will result in new ways to combat cancers and minimize side effects of cancer treatment, as well as identify novel cancer screening and prevention opportunities, while focusing on militarily-relevant cancers and ADSMs with cancer, distinguishing it from any effort that might develop in the future in a civilian organization, as none of this scale exists today. There are five specific APOLLO sub-projects, which are classified based on the organ type of cancer under study: APOLLO 1 = Lung cancer; APOLLO 2 = Gynecological cancer; APOLLO 3 = Prostate cancer; APOLLO 4 = Breast cancer; and APOLLO 5 = all other cancer types.

Both of these projects in the DoD Cancer Moonshot program were specifically developed to focus on ADSM with cancer (readiness), utilize molecular laboratories that are American owned and operated (U.S. DoD and DOE), keep all sensitive de-identified clinical and molecular data on U.S. government computers and servers for maximum data security and analysis (through the NCI), and benefit the nation through any and all discoveries that are made.

FY19 Accomplishments:
- Through APOLLO 1, 2, 3, and 4 ran nearly 1,000 total cancer specimens through the DNA, RNA, and protein molecular platforms per plan.
- Final data analytics completed on APOLLO 1 (lung cancer) molecular platforms, and novel findings identified. Presented at various national scientific forums including MHSRS 2019. Publications in process.
- Successfully opened all of our tissue source sites and biobank for APOLLO 5 in FY19, including a total of nine military treatment facilities across DHA.
- Successfully began accruing APOLLO 5 prospective samples from one of our sites, and achieved IRB approval of APOLLO 5 at two additional sites (WR Bethesda and NMCSD).

FY 2020 Plans:
Identify serum specimens and run them through the serum protein analysis lab platform, and perform initial data analytics on the results.

FY 2021 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 478 / *Applied Proteogenomics Organizational Learning and Outcomes (APOLLO) Consortium (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2021 Plans continue efforts as outlined in FY 2020 ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	14.237	18.556	18.640

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 479 / *Framingham Longitudinal Study (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
479: *Framingham Longitudinal Study (USUHS)*	4.920	4.746	4.920	4.920	-	4.920	4.920	5.018	5.118	5.220	Continuing	Continuing

A. Mission Description and Budget Item Justification

DoD Cancer Moonshot Program - DoD Framingham

DoD's Cancer Moonshot requirement is a mission of the Murtha Cancer Center (MCC) at USU under the authority of a tri-federal Memorandum of Agreement signed July 2016 by the Acting Assistant Secretary of Defense for Health Affairs (DoD), the Under Secretary of Health, Department of Veterans Affairs(VHA), and the Acting Director of the National Cancer Institute (NIH), for a tri-federal program of Clinical Proteogenomics Cancer Research. DoD's Cancer Moonshot promotes readiness and mission accomplishment of the active duty service member (ADSM) force, as well as military beneficiaries, retirees, and veterans. There are about 1,000 ASDMs who are stricken with a new cancer diagnosis annually, and MCC serves as the DoD's Health Affairs-approved Center of Excellence for cancer care and research for these ADSMs. MCC's mission is to bring translational cancer research to all patients in order to improve their health and mission performance, and to help prevent, screen, detect, and treat cancer; minimize side effects of cancer treatments;, and return to duty ADSMs stricken with cancer, as well all other DoD beneficiaries. DoD's Cancer Moonshot initiative allows for the provision of state-of-the-art molecular analysis of tumors and blood of cancer patients which will result in increased force readiness through more targeted treatment of cancers with fewer side effects, as well as better screening for cancer risk and development.

FY19 Accomplishments:
- Completed all mass spectrometry proteomic analysis of Framingham 1 specimens (approximately 900)
- Analyzed Framingham 1 data, identified important novel scientific findings, and presented these findings at four national and international meetings in FY19 including MHSRS 2019.
- Working on Framingham 1 publication manuscript
- Identified Framingham 2 and 3 serum specimens and began process of mass spectrometry workflow
- Identified Framingham 4 organ site (pancreatic cancer) and began scientific protocol development with combined DoD / NCI team

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: DoD Cancer Moonshot Program - DoD Framingham Longitudinal Study	4.746	4.920	4.920
Description: DoD Framingham is a novel project that is enabled by the blood serum specimens stored at the DoD Serum Repository at the Armed Forces Health Surveillance Branch (AFHSB) in Silver Spring, Maryland. This facility stores blood serum drawn from over 10 million ADSMs who were required to undergo mandatory semiannual blood testing for the last 25 years, resulting in this repository with over 65 million blood serum specimens. MCC tumor registry data, which includes every ADSM who developed cancer while on active duty, is matched to data in the Serum Repository. This allows MCC to identify the blood serum of ADSMs who ultimately develop cancer at key times, i.e., before they had cancer, during their cancer treatment, and			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 479 / *Framingham Longitudinal Study (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
after their successful cancer treatment. Four different serum specimens (two before, one during, and one after cancer diagnosis and treatment) from every ADSM who developed certain types of cancer over a ten-year period of time are then sent to the Nation's foremost protein identification (mass spectroscopy) center, i.e., the Pacific Northwest National Laboratory (PNNL) run by the Department of Energy (DOE). This enables identification of the entire proteome circulating in the blood serum of these cancer patients before, during, and after cancer diagnosis. Comparing the proteomes will allow for identification of new protein biomarkers and indicators of treatment response and failure both of individual patients and across all patients with a specific type of cancer. Smaller studies of this nature done by MCC researchers have proven that this is an effective strategy to identify novel diagnostic and treatment protein expression biomarkers that can be assayed in new blood tests for cancer. This project will do it "at scale", i.e. in large numbers of active duty cancer patients (who are otherwise healthy and therefore do not have the "confounding" protein markers of old age, diabetes, and other medical issues). By using serums that go back many years before the ADSM was diagnosed with cancer, the earliest markers of cancer that will be identified, and assays will be performed by another U.S. governmental agency with the best protein detection and analysis tools in the world. Eight specific DoD Framingham sub-projects, classified based on the organ type of cancer, will be conducted: Framingham 1 = Oropharyngeal cancer; Framingham 2 = Lymphoma; Framingham 3 = Bladder cancer; Framingham 4 = Kidney cancer; and Framinghams 5 through 8 subtypes will be determined by MCC and NCI experts in the coming months. Both the APOLLO and Framingham projects in the DoD Cancer Moonshot program were specifically developed to focus on ADSM with cancer (readiness), utilize molecular laboratories that are American owned and operated (U.S. DoD and DOE), keep all sensitive de-identified clinical and molecular data on U.S. government computers and servers for maximum data security and analysis (through the NCI), and benefit the nation through any and all discoveries that are made. ***FY 2020 Plans:*** Continue to identify Framingham serum specimens and conduct serum protein analysis lab platform, and perform initial data analytics on the results. ***FY 2021 Plans:*** FY 2021 Plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding remains the same.			
Accomplishments/Planned Programs Subtotals	4.746	4.920	4.920

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 479 / *Framingham Longitudinal Study (USUHS)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 499 / *MHS Financial System Acquisition (DHA)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
499: *MHS Financial System Acquisition (DHA)*	15.222	20.358	15.373	1.971	-	1.971	6.011	6.051	6.092	6.143	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Health Program (DHP) appropriations' distribution and execution of funding is currently dispersed amongst multiple, disparate accounting systems, which is in direct conflict with Financial Improvement Audit Readiness (FIAR) guidance prioritizing the standardization of financial management systems and business processes. Currently DHP funding is distributed and executed across three disparate systems.

The current Defense Health Agency (DHA) structure hinders the overarching goal for audit ready initiatives and agency standard financial business processes. The identified solution for DHA to meet these challenges is to deploy a single operational financial management system (FMS) with minimal mission and business impact. DHA is researching a system that will accommodate standard and medically-required business processes. The goal is to transition financial operations to a platform that allows for consistency across the DHA, enabling standardized processes, data collection, and reporting.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: MHS Financial System Acquisition	20.358	15.373	1.971
Description: The goal is to transition financial operations to a platform that allows for consistency across the Defense Health Agency, enabling standardized processes, data collection, and reporting. ***FY 2020 Plans:*** Additional research funding necessary to continue the consolidation all DHP appropriations into a single Financial Management System (FMS) system to provide the following capabilities: ***FY 2021 Plans:*** Deployment requirements for the Navy go down and shift towards the operation and maintenance. This program may increase in later years pending potential GFEBS deployment to AF and acceleration in existing acquisitions. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Deployment requirements for the Navy go down and shift towards the operation and maintenance. This program may increase in later years pending potential GFEBS deployment to AF and acceleration in existing acquisitions.			
Accomplishments/Planned Programs Subtotals	20.358	15.373	1.971

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 499 / *MHS Financial System Acquisition (DHA)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA 3: *PE 0807721 Replacement & Modernization*	10.409	22.611	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Acquisition Strategy is to be determined.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 381 / *CoE - Integrative Cardiac Health Care (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
381: *CoE - Integrative Cardiac Health Care (USUHS)*	0.000	2.811	3.118	1.680	-	1.680	1.744	1.809	1.875	1.943	Continuing	Continuing

A. Mission Description and Budget Item Justification

The USU Integrative Cardiac Health Program is a Center of Excellence whose mission is to:
1. Improve force health by an improved understanding of the CVD risk susceptibility and adoption of healthy lifestyles in military-specific populations (e.g. Wounded Warriors) through leading-edge research using novel tools and biotechnologies.
2. Investigate and create transformational models of practical and personalized CVD prevention tracks as an adjunct to traditional care for dissemination to MHS.
3. Refine individualized prevention strategies through "big Data" modeling to define the most cost-effective and sustainable approaches in promoting CV health throughout the military lifecycle.
4. Identify precise strategies for early detection, monitoring and reduction of preclinical/clinical CV and related chronic disease risks for improved clinical outcomes.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Integrative Cardiac Health Center of Excellence	2.811	3.118	1.680
Description: USU is a “central focal point for health-related education and training, research and scholarship, and leadership support to operational military units around the world” and is the ideal engine to establish a strategic partnership to address cardiovascular health.			
FY 2020 Plans: The Integrative Cardiac Health Center of Excellence (ICHP) will continue development and refinement of clinical decision support tools and new models for cardiovascular and overall health; will conduct research studies to improve the health of the Active Duty force by investigating the effectiveness of personalized (gender specific) interventions specifically designed for the military and the effects of these interventions on preclinical atherosclerosis (plaque in arteries). Precision medicine efforts exploring novel biomolecular markers and tests as indicators for early (preclinical) cardiovascular disease risk assessment will continue. Will characterize new clinical phenotypes; detect cardiovascular disease in early stages when it is more likely to be reversible. ICHP will collaborate with Walter Reed Bethesda Cardiovascular Service, the Mayo Clinic, Abbott Laboratories, and Integrative Systems Biology for these efforts. ICHP will use this information to tailor personalized health interventions and build resiliency in the military population before disease affects quality of life. The Wounded Warriors project will continue to examine cardiovascular risk in the amputee and injured Warfighter and begin analysis of bio-samples collected to detect novel biomolecular markers. Study is designed to significantly advance the precision of risk detection and lead to an improvement of current interventions and patient outcomes.			
FY 2021 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 381 / *CoE - Integrative Cardiac Health Care (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2021 Plans continue efforts as outlined in FY 2020. Efforts will be scaled back as funds were adjusted to higher priority programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** As a result of internal decisions, $10M of PE 0603115 ($1.5M in Project Code 381) was re-prioritized which reduced research funding in the areas of health services delivery improvement, pain management and alternatives to opioids, cardiac health, and the development of technologies supporting warfighter health and recovery.			
Accomplishments/Planned Programs Subtotals	2.811	3.118	1.680

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Disseminate medical knowledge products resulting from research and development through articles in peer reviewed journals, revised clinical practice guidelines, and training of residents and fellows in the Military Health System

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 504 / *WRAIR Vaccine Production Facility Research (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
504: *WRAIR Vaccine Production Facility Research (Army)*	0.000	8.000	8.152	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The WRAIR Vaccine Pilot Bioproduction Facility (PBF) is the Department of Defense's only facility capable of producing good manufacturing practices (GMP) quality biologic products for use in early phase clinical trials. The mission of the WRAIR PBF is to support the development and licensure of vaccines and relevant biologics critical to the global health of our Warfighters serving domestically or abroad in compliance with US Food and Drug Administration (FDA) regulations. Funding supports a baseline level of preparedness for vaccine production and improved response-time in the setting of known and emerging infectious disease threats needing a preventive countermeasure while working with a collaborative network of partners. This project supports vaccine development efforts of strategic importance to the DoD, including Service medical research and development programs, those of other DoD organization such as the Defense Threat Reduction Agency and the Defense Advanced Research Projects Agency, and pandemic biopreparedness for emerging infectious disease threats in the Global Health Security Agenda.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: WRAIR Vaccine Production Facility	8.000	8.152	0.000
Description: The WRAIR Vaccine Pilot Bioproduction Facility (PBF) will focus on the manufacture of early phase clinical materials for vaccine production from varied platforms, such as live virus, conjugates, recombinant proteins, DNA, and monoclonal antibody approaches that: (a) expand collaborative partnerships for product development that meet DoD requirements; (b) open active intramural-based discovery efforts of new products for development; and (c) initiate and extend strategic partnerships with external collaborators (Government and industry) to develop/co-develop potential new biologic approaches to pandemic disease preparedness. ***FY 2020 Plans:*** The WRAIR PBF program will continue vaccine and biologic production efforts for use in early phase clinical trials to assess safety and effectiveness of candidate vaccines. ***FY 2021 Plans:*** Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	8.000	8.152	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 504 / *WRAIR Vaccine Production Facility Research (Army)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 506 / *Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
506: *Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)*	0.000	0.000	11.904	11.141	-	11.141	11.385	11.631	11.883	12.141	Continuing	Continuing

A. Mission Description and Budget Item Justification

The "Health Research for Improved Medical Readiness and Healthcare Delivery" program at USUHS is to answer fundamental questions of importance to the military mission of the Department of Defense in five (5) distinct portfolio areas: health services research, global health engagement, precision medicine, women's health, and infectious disease clinical research.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Health Research for Improved Medical Readiness and Healthcare Delivery	0.000	11.904	11.141
Description: The objective of Health Services Research is to build capacity to conduct health services research (HSR) within the MHS. The program will address the lack of system-wide health care evidence to support policy and decision making and insufficient health services research capability to analyze MHS data for improving medical readiness and efficient, effective, quality and safe healthcare. Global Health Engagement (GHE) research is related to operational efforts and advanced technology development efforts that will meet the needs of the Joint Force in either improving the understanding and/or execution of DoD GHE, or utilizing DoD health research activities to engage a partner nation/partner nations in support of Theater Campaign Plan objectives to further research. The GHE research needs of the warfighter are expressed by the regular demand signal of the Joint Force through the Joint Staff Surgeon's Office and the Combatant Commands Surgeons' Offices. Precision Medicine will provide standardized genome profiling services across the MHS. It will provide genomic data analysis and storage under DoD security and privacy compliance policies in order to provide cutting edge genomic information to clinicians and improve health care of warfighter. The military Women's Health research program mission is to develop and guide best practices for the clinical care of women in the military system, through medical research. This research program will identify priorities that utilize novel and well-defined methods in the areas of personalized medicine and population science and focuses on basic, clinical and translational research.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 506 / *Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Infectious Disease Clinical Research is multicenter infectious diseases clinical research focusing on high-impact cohorts and interventional trials, to inform and improve care of the Warfighter. The focus is on emerging infections, antimicrobial resistance, and other high priority infections impacting military readiness in US and abroad. It also will generate research evidence to inform warfighter care, develop DoD clinical practice guidance, assess cost effectiveness of interventions, and assist force health protection policy development. ***FY 2020 Plans:*** Health Services Research: - Define research priorities: Health economics, geographic variation, provider induced demand, disparities, improving care to populations of patients, outcome studies, program evaluation. - Improve policy and practice in the MHS through knowledge translation. Global Health Engagement: - Improve the efficacy of military medical engagements with partner nations in achieving military outcomes - Improve the readiness of the Joint Force to conduct GHE activities in support of Geographic Combatant Commands and national security objectives - Improve the quality of tools and capabilities available to commanders for conducting international security cooperation and cooperative health security engagements Precision Medicine: - Enable single collection site of genomic data for DoD Precision Medicine studies to contribute towards population medicine innovation. - Improve utility for supercomputing infrastructure supporting clinical activities. Women's Health research: - Support research projects in the areas of reproductive health, pain, mental health, cardiovascular disease, cancer, human performance and readiness standards, nutrient and energy requirements for servicewomen, medical simulation violence against women, opioid use and, clinical practice guidelines. Infectious Disease Research: - Execute multisite research through a robust sustainable MHS research network, with capability to execute FDA-regulated clinical trials.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 506 / *Health Research for Improved Medical Readiness and Healthcare Delivery (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
- Translate generated high quality evidence as follows: Develop new and refined DoD clinical practice guidance in support of Force Health Protection, inform DoD and National policies related to the prevention and management of infectious diseases, and provide direct support of infection threat assessment and mitigation efforts to the Geographic Combatant Commands in collaboration with Military Public Health authorities. ***FY 2021 Plans:*** FY 2021 Plans continue efforts as outlined in FY 2020. Efforts will be scaled back as funds were adjusted to higher priority programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** As a result of internal decisions, $10M of PE 0603115 ($1.0M in Project Code 506) was re-prioritized which reduced research funding in the areas of health services delivery improvement, pain management and alternatives to opioids, cardiac health, and the development of technologies supporting warfighter health and recovery.			
Accomplishments/Planned Programs Subtotals	0.000	11.904	11.141

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 507 / *Brain Injury and Disease Prevention, Treatment and Research (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
507: *Brain Injury and Disease Prevention, Treatment and Research (USUHS)*	0.000	0.000	13.317	13.583	-	13.583	13.855	14.132	14.415	14.703	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program supports drug discovery for chronic traumatic and encephalopathy/neurodegenerative disease.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Brain Injury and Disease Prevention, Treatment and Research	0.000	13.317	13.583

Description: Brain Injury and Disease Prevention, Treatment and Research is focused upon identifying drugs that will interfere with pathological tau prion formation in the brains of service members who are at risk for developing CTE and other neurodegenerative diseases following repeated TBI. Service members who have served in combat and have received repeated impact and/or blast TBIs are at risk for developing chronic traumatic encephalopathy (CTE) and other neurodegenerative diseases which are associated with significant persistent behavioral/neurologic manifestations. Currently, there are no validated means for diagnosing these problems in living patients or drugs to effectively treat them. The overall mission of this program is to develop drug candidates that will effectively block the formation of brain tau prions that can be entered into clinical trials for the prevention and/or treatment of CTE and other neurodegenerative disorders in at-risk active duty and retired service members.

FY 2020 Plans:

The USUHS plans for FY 2020 are to:

- Screen for drug candidates that interfere with brain tau prion formation, a defining feature of CTE and other neurodegenerative diseases and maximize their bioavailability and therapeutic effectiveness.
- Identify compounds that will enter the brain and bind with aggregated tau prions and can be used as PET tracers for diagnosis and markers of disease progression.
- Develop animal models of tau prion formation to test efficacy of putative drug candidates
- Using candidate drugs identified under this program, prepare to initiate clinical trials in at-risk service members for the treatment or prevention of CTE and other tau prion-related disorders.

FY 2021 Plans:

FY 2021 Plans continue efforts as outlined in FY 2020.

FY 2020 to FY 2021 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 507 / *Brain Injury and Disease Prevention, Treatment and Research (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Annual price adjustment.			
Accomplishments/Planned Programs Subtotals	0.000	13.317	13.583

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 508 / *Psychological Health and Resilience (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
508: *Psychological Health and Resilience (USUHS)*	0.000	0.000	7.000	7.140	-	7.140	7.283	7.428	7.577	7.729	Continuing	Continuing

A. Mission Description and Budget Item Justification

The "Psychological Health and Resilience" program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the areas of prevention, treatment and recovery of warfighters and families in behavioral and mental health, which are critical to force health and readiness. Research is necessary to guide policy and ensure optimal delivery of behavioral health training and services across the continuum of care and deployment cycle. Threats addressed by this research component include post-traumatic stress disorder (PTSD), suicide, family separation, and family violence.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Psychological Health and Resilience	0.000	7.000	7.140
Description: STARRS-LS, the longitudinal successor to the groundbreaking Army STARRS research conducted from 2009 to 2015, is the largest study of military suicide ever undertaken, and in addition has yielded a wealth of information about a variety of other health issues relevant to the military. STARRS-LS seeks to extend the original effort by continuing to follow the original participants, expanding the Historical Administrative Data Study and using Big Data techniques to develop knowledge from it, and by combining survey and health outcome data with genetic analyses from samples provided by research participants.			
FY 2020 Plans: - Maintaining the current data and biospecimens for future analyses -- Historical Administrative Data Study (HADS), survey data, and biorepository. - Conduct future wave of data collection from original STARRS-LS Army sample and link to historical data records. - Develop prediction algorithms for suicide attempts and other outcomes. - Provide the resultant knowledge to the Army and DoD for use in modifying recruitment algorithms and developing targeted early preventive intervention programs for Soldiers at high risk of adverse outcomes.			
FY 2021 Plans: FY 2021 Plans continue efforts as outlined in FY 2020.			
FY 2020 to FY 2021 Increase/Decrease Statement: Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	0.000	7.000	7.140

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 508 / *Psychological Health and Resilience (USUHS)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 509 / *Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
509: *Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)*	0.000	0.000	19.323	13.710	-	13.710	14.104	14.505	14.916	15.334	Continuing	Continuing

A. Mission Description and Budget Item Justification

The “Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness” program at USUHS is designed to answer fundamental questions of importance to the military medical mission of the Department of Defense in the three portfolio areas: Transforming Technology for the Warfighter (TTW), Surgical Critical Care, and the Rehabilitation Sciences Research.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness	0.000	19.323	13.710

Description: The TTW program aims to support highly collaborative advanced technology projects by bringing together industry, academia and civilian medical centers including minority serving institutions with experience in solving defense and civilian health problems. Supported projects will focus on the 3 principal medical areas for defense health (Combat Casualty Care, Military Operational Medicine, and Clinical and Rehabilitative Medicine) with an emphasis on direct relevance to identified military needs, translational potential and clear strategy for product commercialization with a low to medium risk – high reward payoff. Additionally, for USU, the TTW program will cultivate, establish and leverage partnerships between USU faculty/investigators and industry, academia and civilian medical centers including minority serving institutions. Results from the TTW program will increase DoD’s workforce capability, DoD’s access to leading edge technologies and leverage industry knowledge and funded research data for warfighter medical needs.

Surgical Critical Care (SC2i) will enroll critically ill patients, leveraging deep medical and –omics data to develop Clinical Decision Support Tools (CDSTs) that will improve clinical outcomes and lower resource utilization across military and civilian healthcare systems. The CDSTs will further assist readiness by either accelerating return to duty (abridged length-of-stay across the ICU, general ward, and rehabilitation continuum of care) and curbing medical resource burdens.

Rehabilitation Sciences Research supports clinical and translational research efforts dedicated to enhancing the rehabilitative care of the wounded warrior, particularly those with orthopeadic trauma, amputation and neurological injury. Research focus areas include: 1)Identifying and mitigating barriers to successful rehabilitation, return to duty and community reintegration; 2) Improved pain management to support active participation in rehabilitation; 3) Applying Advanced Technologies to augment

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 509 / *Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021

rehabilitation methods and outcomes assessments; 4) Developing and testing advanced technologies to restore individual functional independence; 5) Regenerative Rehabilitation translational products for war-related trauma.

FY 2020 Plans:

Transforming Technology for the Warfighter:

- Support the advancement of medical technologies such as 1) wearable devices (e.g. enhanced performance monitoring using biosensors), 2) operational injuries (e.g. TBI, blast injuries, trauma care), 3) rehabilitation (e.g. regenerative medicine, wound healing), 4) precision medicine (e.g. omics, biomarkers), and 5) rapid treatment and diagnostics at point of injury.
- Cultivate, establish and leverage partnerships with industry, academia and civilian medical centers including minority serving institutions to create, innovate and advance disruptive medical technologies to address warfighter medical needs.

Surgical Critical Care:

- SC2i will leverage a databank to develop, validate, and/or deploy eleven (11) predictive algorithms for conditions associated with high mortality and morbidity (e.g. timing of closure of extremity and open abdominal injuries, venous thromboembolism, pneumonia, bacteremia, acute kidney injury, acute respiratory distress syndrome, heterotopic ossification, small bowel obstruction, acute appendicitis, and vasospasm for severe traumatic brain injuries).
- It will support robust medical education and training to ensure the battlefield surgeons of tomorrow are appropriately trained in the use of clinical and biomarker-based CDSTs.

Rehabilitation Sciences Research:

- Define the optimal rehabilitation strategies and prosthetic selection, fitting and training for wounded warriors with osseointegration (direct skeletal attachment of a prosthesis)
- Examine the clinical efficacy of virtual and augmented reality applications to enhance rehabilitation of individuals with extremity dysfunction and acquired brain injury.
- Develop clinical applicable tools to objectively assess gait for individuals with lower limb amputation and dysfunction
- Explore potential rehabilitative interventions to mitigate heterotopic ossification formation from blast thru translatable model
- Understand the bio-psycho-social and genetic factors that influence symptomatology and response to novel treatments for individuals with TBI, Amputation, and PTSD, including phantom limb pain, secondary back pain, and post-concussive symptoms.

FY 2021 Plans:

FY 2021 Plans continue efforts as outlined in FY 2020. The Technology Research Program efforts will be scaled back as funds were adjusted to higher priority programs.

FY 2020 to FY 2021 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 509 / *Innovative Technologies for Improved Medical Diagnoses, Rehabilitation and Warfighter Readiness (USUHS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
As a result of internal decisions, $10M of PE 0603115 ($6.0M in Project Code 509) was re-prioritized which reduced research funding in the areas of health services delivery improvement, pain management and alternatives to opioids, cardiac health, and the development of technologies supporting warfighter health and recovery.			
Accomplishments/Planned Programs Subtotals	0.000	19.323	13.710

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373 / *GDF - Medical Technology Development*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373: *GDF - Medical Technology Development*	1,006.232	123.885	78.868	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force - Medical Technology Development provides funds for development of promising candidate solutions that are selected for initial safety and effectiveness testing in animal studies and/or small-scale human clinical trials regulated by the US Food and Drug Administration prior to licensing for human use. Medical technology development is managed by six Joint Program Committees: 1- Medical Simulation and Information Sciences research aims to coordinate health information technology, simulation, and training research across the Military Health System. Technology development efforts are directed toward the medical simulation task. 2- Military Infectious Diseases research is developing protection and treatment products for military relevant infectious diseases. 3- Military Operational Medicine research goals are to develop and validate medical countermeasures against operational stressors, prevent physical and psychological injuries during training and operations, and to maximize health, performance and fitness of Service members. 4- Combat Casualty Care research is optimizing survival and recovery in injured Service members across the spectrum of care from point of injury through en route and facilities care. 5- Radiation Health Effects research focuses on technology development of acute radiation exposure medical countermeasures development. 6- Clinical and Rehabilitative Medicine research is developing knowledge and materiel products to reconstruct, rehabilitate, and provide care for injured Service members. Technology development efforts are directed against tasks in neuromusculoskeletal rehabilitation, pain management, regenerative medicine, and sensory systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: GDF – Medical Technology Development	123.885	78.868	0.000
Description: Funds provide for the development of medical technology candidate solutions and components of early prototype systems for test and evaluation. Promising drug and vaccine candidates, knowledge products, and medical devices and technologies are selected for initial safety and effectiveness testing in small scale human clinical trials.			
FY 2020 Plans: Medical simulation and information sciences technology maturation progressing to focus on developing and integrating pharmacodynamics (effects of drugs and the mechanism of their action) and pharmacokinetics (movement of drugs within the body) algorithms into an open source physiology research engine used to support a repository that contains simulated pharmaceuticals and other resuscitative treatments that are the most relevant to point of injury and en-route care training. It will incorporate the side effects of the drugs and drug on drug interactions to elicit how to deal with additional acute reactions. This repository is designed to improve medical simulation and training. Research will also continue to focus on assessment system tools with emphasis on combat casualty care training. Continuing efforts to optimize synthetic materials used in part-task mannequins, full body mannequins, or peripherals that could be used on the Advanced Modular Manikin in order to better represent tissues under different environments.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 373 / *GDF - Medical Technology Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Military infectious diseases progressing research supporting the inter-service efforts between DoD clinical and research and development groups to develop novel and innovative therapeutics and delivery technologies for combat wound infections. Ongoing multi-year studies addressing critical research focus areas in wound infections, such as improved treatment options for infections with multi-drug resistant organisms, to be supported. These efforts will be in alignment with the National Action Plan for Combating Antibiotic-Resistant Bacteria. Results of studies to develop antibacterial agents and clinical practice guidelines for better wound infection management to be evaluated for down-selection. Efforts continuing aimed at partnering with other entities to rapidly accelerate promising, innovative drug and vaccine solutions to combat emerging infectious diseases (e.g., Chikungunya, MERS, Zika). Military operational medicine: Researchers will continue to collect blast exposure data to validate whole body models of blast injury exposure in the training environment. Research progresses to refine and improve predictive auditory injury models in order to update acoustic injury standards for health hazard assessment. Efforts to develop tools to optimize return to duty after lower extremity (foot and ankle) injury, and head supported mass acute injury predictive models for mounted and dismounted environments are ongoing. Progressing data collecting to improve multisensory cueing criteria for aircrew performance optimization in degraded visual environments. Research focuses to evaluate longitudinal data collected for dietary supplement use with correlation to usage patterns with associated negative and positive health effects. Research focuses to provide guidance on the effects of healthy cooking for food choice behaviors, nutritional status, and psychological states in Wounded Warriors and their families. Also, studies continue evaluating the physical demands associated with selection to historically male military occupations to develop gender-neutral Military Occupational Specialty assignment standards. Ongoing research aimed at delivering assessment, prevention, and treatment interventions and tools that mitigate substance abuse, including prescription drug misuse and alcohol and other drug abuse. Efforts toward delivery of interventions to prevent suicide behaviors and conduct clinical trials to test the efficacy of the interventions are progressing. Studies aimed at delivering resilience building/prevention programs focused on education, skills, and novel service delivery methods for Service member and Family resilience are ongoing. Newly developed and existing large-scale PTSD datasets and state-of-the-art analytic methods are being used to produce individualized treatment guidelines for PTSD as well as PTSD-related sleep disturbances. Candidate biomarkers validation of exposure to inhaled or ingested toxic substances and develop medical guidance for risk assessment of adverse health outcomes are ongoing. Research continues its focus to provide validated metrics for optimized operational task performance in extreme environments. Efforts to validate novel methods for estimating thermal strain from non-invasive measures are progressing. Combat casualty care hemorrhage research will continue to evaluate immune system modulating drugs to treat hemorrhagic shock with a focus on the time period 4 to 72 hours post injury (relevant to prolonged field care). In addition, progressing work on the pathophysiological (functional changes associated with injury) impacts of using advanced hemorrhage (bleeding) control and resuscitation approaches in prolonged field care scenarios where evacuation may be delayed. Animal studies are ongoing to evaluate oxygen delivery solutions infused to maintain survivability for potential use in severe casualties where blood transfusion			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 373 / *GDF - Medical Technology Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
is not available. Neurotrauma research will continue to focus on the development of novel technologies to better assess, monitor and maintain the stability of more severely injured TBI casualties closer to point of injury and during prolonged field care. Precision medicine research to improve the characterization of TBI, develop targeted therapies, devices, clinical guidelines, the impact of pre-injury conditions and the environment to improve the care provided to TBI casualties continues. Furthermore, neurotrauma research to investigate the impact of pre-injury conditions and the environment on Service member response to treatment and recovery following TBI. The program is leveraging data from Combat Operations to improve management of TBI by correlating injury events and medical records. Treatments for extremity trauma to develop specialized fracture stabilization techniques, address treatments for organ support and stabilization of craniomaxillofacial wounds will proceed to mature. Pre-hospital Tactical Combat Casualty Care will develop enhanced surgical procedures and equipment. En Route Care research will progress the development of specifications for an integrated system to support safe patient care and hand-offs, and the development of expanded en route care interventions and treatment capabilities. The military medical photonics program continues to develop light-based technologies and systems for combat casualty care, to include applications to detect blood pooling in the abdomen and oxygen content in the pulmonary artery. Photochemical cross-linking (the use of light to create new molecular bonds) to strengthen veins for grafting to arteries and the post-surgical benefits of photochemical bonding (the use of light to create new molecular bonds) in reducing scarring and adhesions are being studied. Research is being conducted on miniaturized sensors and actuators which can be inserted or implanted for important new kinds of diagnostic and therapeutic benefit. Radiation health effects research will continue to evaluate therapeutic candidates and radioprotectants for acute radiation exposure, and develop data to support preparation of a technical data package for investigational new drug applications. Research will develop data to support qualification of models for use in FDA approved trials. Objectives will include demonstrating improved survivability following high doses of radiation exposure with treatment at 24 hours and less after exposure. Clinical and rehabilitative medicine will conduct early human trials of promising products, evaluate preclinical safety of promising treatments, and test FDA-licensed products in the areas of neuromusculoskeletal injury, pain management, and regenerative medicine. Will support clinical trials in neuromusculoskeletal injuries to provide products and information solutions for diagnosis, treatment and rehabilitation outcomes after Service-related injuries. Will assess chronic pain risk factors and evaluate novel therapeutics and devices for pain management. Will assess preclinical and early clinical safety and efficacy of technologies designed to alter or regulate immune functions, skin substitutes to treat burn injury, treatments for volumetric muscle loss, treatments for segmental bone defects, and strategies for stabilization or regeneration of neuromuscular junctions for nerve injury. ***FY 2021 Plans:*** Efforts realigned to PE 06031115DHA Project Codes 373A-G. ***FY 2020 to FY 2021 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 373 / *GDF - Medical Technology Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Efforts realigned to PE 06031115DHA Project Codes 373A-G.			
Accomplishments/Planned Programs Subtotals	123.885	78.868	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Mature and demonstrate safety and effectiveness of medical procedures, medical devices, and drug and vaccine candidates intended to prevent or minimize effects from battlefield injuries, diseases, and extreme or hazardous environments. Milestone B packages will be developed to transition products into advanced development.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373A / *GDF - MTD (Combat Casualty Care)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373A: *GDF - MTD (Combat Casualty Care)*	-	0.000	0.000	11.168	-	11.168	15.736	16.756	19.649	20.114	Continuing	Continuing

A. Mission Description and Budget Item Justification

Medical Technology Development provides funds for the development of promising candidate solutions that are selected for initial safety and effectiveness testing in animal studies and/or human clinical trials regulated by the U. S. Food and Drug Administration prior to licensing for human use. Joint Battlefield Healthcare research is optimizing survival, recovery and rehabilitation in injured Service members across the spectrum of care from point of injury through enroute care and facilities care.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Joint Battlefield Healthcare (Formerly Combat Casualty Care)	0.000	-	11.168
Description: Joint Battlefield Healthcare medical technology development will continue to focus on investigating new diagnostic tools and treatments for prolonged battlefield hemorrhage control, how to best diagnose and treat severe neurotrauma from the point of injury to evacuation/enroute care and long term hospital and rehabilitative care, and research into optimizing the system wide movement of patients to different levels of care to ensure positive clinical outcomes. ***FY 2021 Plans:*** Joint Battlefield Healthcare medical technology development will continue to focus on investigating new diagnostic tools and treatments for prolonged battlefield hemorrhage control, how to best diagnose and treat severe neurotrauma from the point of injury to evacuation/enroute care and long term hospital and rehabilitative care, and research into optimizing the system wide movement of patients to different levels of care to ensure positive clinical outcomes. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	0.000	-	11.168

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373B / *GDF - MTD (Military Operational Medicine)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373B: *GDF - MTD (Military Operational Medicine)*	-	0.000	0.000	23.255	-	23.255	19.046	19.116	18.151	18.557	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct proof of technological feasibility studies and experiments and/or assessment of operability and producibility to address a military medical need identified through the Joint Capabilities Integration and Development System. Efforts are directed towards prototypes for field experiments and/or tests in a simulated environment, assessment/proof of feasibility or demonstration of utility/cost reduction that support medical countermeasures against operational stressors, or that prevent musculoskeletal, neurosensory, and psychological injuries during training and from point of injury through role of care four.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Health and Recovery (Formerly Military Operational Medicine)	0.000	-	23.255
Description: Efforts focus on: Injury prevention and recovery; Optimized cognition and fatigue management; Psychological health and resilience; and, Performance in extreme environments. Activities will continue to focus on: injury prevention and recovery related to musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; optimization of psychological health and resilience; and diagnosis & treatment of mental health disorders. ***FY 2021 Plans:*** Efforts focus on: Injury prevention and recovery; Optimized cognition and fatigue management; Psychological health and resilience; and, Performance in extreme environments. Activities will continue to focus on: injury prevention and recovery related to musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; optimization of psychological health and resilience; and diagnosis & treatment of mental health disorders. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	0.000	-	23.255

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 373B / *GDF - MTD (Military Operational Medicine)*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373C / *GDF - MTD (Medical Simulation & Training/Health Informatics)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373C: *GDF - MTD (Medical Simulation & Training/Health Informatics)*	-	0.000	0.000	12.613	-	12.613	13.044	13.339	13.637	13.942	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct proof of technological feasibility studies and experiments and/or assessment of operability and producibility to address a military medical need identified through the Joint Capabilities Integration and Development System. Efforts are directed towards prototypes for field experiments and/or tests in a simulated environment, assessment/proof of feasibility or demonstration of utility/cost reduction that support medical simulation to increase military medical personnel's knowledge, skills and abilities to deliver combat casualty care support to manage patient injury and illness and to conduct patient movement from point of injury through role of care four.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Simulation Technologies (Formerly Medical Simulation Technologies & Training/Health Informatics)	0.000	-	12.613
Description: Studies, investigations, and non-system specific technology effort focus on prototyping tissue models, technologies that simulate medical condition progress over time, technologies that simulate injury, technologies that replicate warfighter bio-physiology, and, technologies that simulate high-fidelity combat casualty care scenarios. Activities will continue to focus on tissue models that accurately simulate the feel, pliability, flexibility, and responsiveness of live tissue; technologies that simulate the degradation or worsening of a medical condition over time, as well as simulate the improvement of a medical condition over time; technologies that simulate injury, especially hemorrhage, fractures, and ocular damage; technologies that accurately reflect warfighter bodily characteristics and are rugged enough to simulate patient care and movement throughout the entire continuum of care; technologies that simulate combat scenarios to provide realistic environments; and, technologies that simulate patient movement through the continuum of care.			
FY 2021 Plans: Studies, investigations, and non-system specific technology effort focus on prototyping tissue models, technologies that simulate medical condition progress over time, technologies that simulate injury, technologies that replicate warfighter bio-physiology, and, technologies that simulate high-fidelity combat casualty care scenarios. Activities will continue to focus on tissue models that accurately simulate the feel, pliability, flexibility, and responsiveness of live tissue; technologies that simulate the degradation or worsening of a medical condition over time, as well as simulate the improvement of a medical condition over time; technologies that simulate injury, especially hemorrhage, fractures, and ocular damage; technologies that accurately reflect warfighter bodily characteristics and are rugged enough to simulate patient care and movement throughout the entire continuum of care;			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 373C / *GDF - MTD (Medical Simulation & Training/Health Informatics)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
technologies that simulate combat scenarios to provide realistic environments; and, technologies that simulate patient movement through the continuum of care. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	0.000	-	12.613

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373D / *GDF - MTD (Clinical and Rehabilitation Medicine)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373D: *GDF - MTD (Clinical and Rehabilitation Medicine)*	-	0.000	0.000	13.040	-	13.040	14.980	15.034	14.275	14.595	Continuing	Continuing

A. Mission Description and Budget Item Justification

Clinical and rehabilitative medicine activities continue to develop knowledge and materiel products to reconstruct, rehabilitate, and provide care for injured Service member is the areas of neuromusculoskeletal injury, pain management, regenerative medicine, and sensory systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Clinical and Rehabilitation Medicine	-	-	13.040
Description: Clinical and rehabilitation medicine efforts will continue to support clinical trials in neuromusculoskeletal injuries to provide products and information solutions for diagnosis, treatment, and rehabilitation outcomes for Service-related injuries. Develop solutions (knowledge and materiel) for the diagnosis and alleviation of pain, restoration or regeneration of neuromusculoskeletal tissues, and sensory system (ocular) rehabilitation and treatment. ***FY 2021 Plans:*** Clinical and rehabilitation medicine efforts will continue to support clinical trials in neuromusculoskeletal injuries to provide products and information solutions for diagnosis, treatment, and rehabilitation outcomes for Service-related injuries. Develop solutions (knowledge and materiel) for the diagnosis and alleviation of pain, restoration or regeneration of neuromusculoskeletal tissues, and sensory system (ocular) rehabilitation and treatment. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	-	-	13.040

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373E / *GDF - MTD (Military Infectious Disease)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373E: *GDF - MTD (Military Infectious Disease)*	-	0.000	0.000	6.409	-	6.409	6.630	6.779	6.932	7.087	Continuing	Continuing

A. Mission Description and Budget Item Justification

Military infectious disease efforts continue to focus on the development of protection and treatment products for military relevant infectious diseases.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Infectious Disease	-	-	6.409
Description: Military infectious disease activities to support efforts (including clinical) to develop innovative therapeutics and delivery technologies for combat wound infections. These efforts include Combating Antibiotic Resistant bacteria as well as accelerating promising drug and vaccine solutions to emerging infectious diseases (e.g. chikungunya, MERS, and Zika. ***FY 2021 Plans:*** Military infectious disease activities to support efforts (including clinical) to develop innovative therapeutics and delivery technologies for combat wound infections. These efforts include Combating Antibiotic Resistant bacteria as well as accelerating promising drug and vaccine solutions to emerging infectious diseases (e.g. chikungunya, MERS, and Zika. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	-	-	6.409

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373F / *GDF - MTD (Radiological Health Effects)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373F: *GDF - MTD (Radiological Health Effects)*	-	0.000	0.000	0.501	-	0.501	0.518	0.531	0.542	0.554	Continuing	Continuing

A. Mission Description and Budget Item Justification

Research and development in countermeasures for acute radiation exposure leading toward identification of post-exposure treatment of radiation injury. Developing an FDA-approved countermeasure for both pre-exposure prophylaxes and post-exposure treatments of acute radiation syndrome (ARS) will help improve health outcomes for radiation exposure injuries.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Radiological Health Effects	-	-	0.501
Description: Develop in vivo models, assays, and other enabling technologies to support transition of candidate MCM(s) and to reduce risk during advanced development. This efforts will include the identification and characterization of biomarkers to establish novel druggable targets, understanding differences in species sensitivity to radiation, evaluating direct and indirect mechanisms of actions of high and low linear energy transfer (LET) radiation sources (e.g., neutrons, gamma), and, determining radiosensitivity and radioresistance of various systems/organs. ***FY 2021 Plans:*** Develop in vivo models, assays, and other enabling technologies to support transition of candidate MCM(s) and to reduce risk during advanced development. This efforts will include the identification and characterization of biomarkers to establish novel druggable targets, understanding differences in species sensitivity to radiation, evaluating direct and indirect mechanisms of actions of high and low linear energy transfer (LET) radiation sources (e.g., neutrons, gamma), and, determining radiosensitivity and radioresistance of various systems/organs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	-	-	0.501

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0603115DHA / *Medical Technology Development*	Project (Number/Name) 373G / *GDF - MTD (Military Medical Photonics)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
373G: *GDF - MTD (Military Medical Photonics)*	-	0.000	0.000	10.000	-	10.000	10.200	10.404	10.612	10.824	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct proof of technological feasibility studies and experiments and/or assessment of operability and producibility to address military medical needs identified through the Joint Capabilities Integration and Development System. Efforts are directed towards prototypes for field experiments and/or tests in a simulated environment, assessment/proof of feasibility or demonstration of utility/cost reduction that support development and utilization of optical science and technology for diagnostic, imaging, and therapeutic solutions in support of combat casualty care.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Medical Photonics	-	-	10.000
Description: The Military Medical Photonics Program is an interdisciplinary program of physical and biological scientists, engineers, and physicians addressing diagnostic and therapeutic needs to support combat casualty care. Activities will continue to focus on diagnostic, imaging, and therapeutic studies. Specific efforts include: Photochemical tissue bonding for wound repair, passivation, and vein stiffening for abnormal connections between an artery and a vein; Optical applications for treatment and prevention of wound contamination and scarring, and to support wound healing and cartilage regeneration; Photonics-based diagnostics, including early detection of airway inhalation injury and implantable biomarker sensors; Investigations of photonics technologies to support the prolonged shelf life of human platelets; and Photobiomodulation to affect cognitive function. ***FY 2021 Plans:*** The Military Medical Photonics Program is an interdisciplinary program of physical and biological scientists, engineers, and physicians addressing diagnostic and therapeutic needs to support combat casualty care. Activities will continue to focus on diagnostic, imaging, and therapeutic studies. Specific efforts include: Photochemical tissue bonding for wound repair, passivation, and vein stiffening for abnormal connections between an artery and a vein; Optical applications for treatment and prevention of wound contamination and scarring, and to support wound healing and cartilage regeneration; Photonics-based diagnostics, including early detection of airway inhalation injury and implantable biomarker sensors; Investigations of photonics technologies to support the prolonged shelf life of human platelets; and Photobiomodulation to affect cognitive function. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Efforts realigned from Project Code 373.			
Accomplishments/Planned Programs Subtotals	-	-	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0603115DHA / *Medical Technology Development*	**Project (Number/Name)** 373G / *GDF - MTD (Military Medical Photonics)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0604110DHA *I Medical Products Support and Advanced Concept Development*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	1,264.357	158.933	138.055	132.331	-	132.331	142.252	145.097	147.999	150.959	Continuing	Continuing
400Z: *CSI - Congressional Special Interests*	354.527	46.816	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
434A: *Medical Products Support and Advanced Concept Development (AF)*	18.617	4.000	4.000	4.080	-	4.080	4.162	4.245	4.330	4.417	Continuing	Continuing
374: *GDF - Medical Products Support and Advanced Concept Development*	891.213	108.117	124.055	128.251	-	128.251	138.090	140.852	143.669	146.542	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force - Medical Products Support and Advanced Concept Development: This program element (PE) provides funding to support: advanced concept development of medical products that are regulated by the US Food and Drug Administration (FDA); clinical and field validation studies supporting the transition of FDA-licensed and unregulated products and medical practice guidelines to the military operational user; prototyping; risk reduction and product transition efforts for medical information technology applications such as coordination with the Program Execution Offices for integration of medical aspects into other acquisition Programs of Record; and medical simulation and training system technologies.

Development, test, and evaluation in this PE is designed to address requirements identified through the Joint Capabilities Integration and Development System and other Department of Defense operational needs. Medical development, test, and evaluation priorities for the Defense Health Program (DHP) are guided by, and will support, the National Defense Strategy, the Joint Staff Surgeon's Joint Concept for Health Services, and other overarching DoD strategic framework documents.

Program development and execution is coordinated with all of the Military Services and Special Operations Command, appropriate Defense agencies or activities and other federal agencies, to include the Department of Veterans Affairs, the Department of Health and Human Services, and the Department of Homeland Security. Coordination occurs through the planning and execution activities of the Defense Health Agency Component Acquisition Executive (DHA CAE) as the Milestone Decision Authority for medical materiel development efforts. As technologies mature, the most promising efforts will transition to medical products and support systems development funding, PE 0605145.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0604110DHA *I Medical Products Support and Advanced Concept Development*

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	161.094	128.055	132.331	-	132.331
Current President's Budget	158.933	138.055	132.331	-	132.331
Total Adjustments	-2.161	10.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.161	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 400Z: *CSI - Congressional Special Interests*		
Congressional Add: *427A - Traumatic Brain Injury / Psychological Health*	2.540	0.000
Congressional Add: *441A - Joint Warfighter Medical Research Program*	21.785	10.000
Congressional Add: *464A – CSI - Program Increase: Restore Core Research Funding Reduction (GDF)*	22.491	0.000
Congressional Add: *PC 540 - CSI HIV/AIDSPrevention Program*	0.000	0.000
Congressional Add Subtotals for Project: 400Z	46.816	10.000
Congressional Add Totals for all Projects	46.816	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 400Z / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
400Z: *CSI - Congressional Special Interests*	354.527	46.816	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY 2018, the Defense Health Program funded Congressional Special Interest (CSI) directed research. The strategy for the FY 2018 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: 427A - Traumatic Brain Injury / Psychological Health ***FY 2019 Accomplishments:*** CSI Add ***FY 2020 Plans:*** N/A	2.540	0.000
Congressional Add: 441A - Joint Warfighter Medical Research Program ***FY 2019 Accomplishments:*** CSI Add ***FY 2020 Plans:*** CSI Add	21.785	10.000
Congressional Add: 464A – CSI - Program Increase: Restore Core Research Funding Reduction (GDF) ***FY 2019 Accomplishments:*** CSI Restoral Add ***FY 2020 Plans:*** N/A	22.491	0.000
Congressional Add: PC 540 - CSI HIV/AIDSPrevention Program ***FY 2019 Accomplishments:*** CSI Add ***FY 2020 Plans:*** N/A	0.000	0.000
Congressional Adds Subtotals	46.816	10.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 400Z / *CSI - Congressional Special Interests*

D. Acquisition Strategy

Prior year CSI funded research will be assessed for developmental maturity and qualification for initial or continued advanced development funding. If advanced development criteria are met, follow-on development will be solicited through a peer-reviewed process.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 434A / *Medical Products Support and Advanced Concept Development (AF)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
434A: *Medical Products Support and Advanced Concept Development (AF)*	18.617	4.000	4.000	4.080	-	4.080	4.162	4.245	4.330	4.417	Continuing	Continuing

A. Mission Description and Budget Item Justification

Air Force Medical Products Support and Advanced Concept Development & Prototyping efforts are focused on achieving rapid transition of promising, high TRL commercially-available off-the-shelf products through minor modifications and/or enhancements to address the most pressing medical needs of the Warfighter, accelerating transition of those technologies to operators in the field. Development, Modification, and Enhancement projects will emphasize technologies supporting AF/SG's aerospace & operational medicine and medical readiness, enabling AF/SG key mission areas and major programs (e.g. Critical Care Air Transport Teams, Operational Support Teams, Operational Medical Readiness Squadrons) to deliver and sustain medical warfighting capabilities. Funding provides critical flexibility to make and act on materiel solution investment decisions in an annual cycle. Derive benefits from rapid insertion of high value / impact technologies into healthcare operations with programmed funding to address capabilities that enter the acquisition life-cycle at high TRL levels that can readily be implemented with significant upside potential. Program ensures viability of S&T and translational research efforts with a materiel component by providing programmed funding for logical progression and transition of those activities in the product development lifecycle.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Products Support and Advanced Concept Development (AF)	4.000	4.000	4.080
Description: Rapidly transition key COTS and near-COTS based technology solutions to the warfighter through assessment/evaluation and minor modification or enhancement of solutions to address threshold operational requirements and associated key performance parameters. Provide core capability to rapidly address capability gaps and requirements with affordable state-of-the art commercial technologies in support of the operational mission. Provide core capability to logically progress initiatives and concepts from S&T and translational/knowledge-focused programs (6.1-6.3) into materiel solutions and conduct the advanced development and transition activities needed to ensure those products are fielded in an effective, affordable, timely and efficient manner.			
FY 2020 Plans: Continue advanced development and refinement of variable-flow aortic hemostasis and resuscitation balloon treatment for combat casualty care in developing a prototype field catheter with packaging and inserts for testing in preparation of FDA approval and pending clinical trials. Begin assessment and development of Medical Modernization efforts including, but not limited to, automated/autonomous control of oxygen and ventilation intervention for patient care; continue developing a commercially-available system for producing upon-demand sterile water for injection and Intravenous (IV) solutions in deployed EMEDS and Naval vessels using onsite/onboard water sources that will eventually include reconstitution of dried human plasma when			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 434A / *Medical Products Support and Advanced Concept Development (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
available commercially; technology that utilizes elemental oxygen to cause immediate coagulation in wounds at the point of injury, and ruggedized, portable materiel products for use in expeditionary settings; Continue development of patient loading and transport products. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Inflationary price increases.			
Accomplishments/Planned Programs Subtotals	4.000	4.000	4.080

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Partnership with the USAMRMC, Navy Medical Research Center (NMRC), AFRL, AFLCMC, Department of the Interior (interagency cooperative agreements and use award of delivery orders and task assignments) and medical technology consortiums to perform engineering, manufacturing, and prototype development IDIQ vehicles to include those awarded under SBIR phase III provisions or similar. Utilization of Small Business Innovative Research program direct awards for Phase III transition efforts and a Cooperative Agreement structure through Foundations supporting military medical research and development programs. Will utilize industry-standard project management processes and DoD Acquisition process managed by the Air Force Life Cycle Management Center (AFLCMC), Wright-Patterson AFB.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 374 / *GDF - Medical Products Support and Advanced Concept Development*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
374: *GDF - Medical Products Support and Advanced Concept Development*	891.213	108.117	124.055	128.251	-	128.251	138.090	140.852	143.669	146.542	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force-Medical Products Support and Advanced Concept Development: This funding supports materiel development of products that provide solutions for the most pressing medical needs of the Warfighter through advanced concept development of medical products that are regulated by the US Food and Drug Administration (FDA); clinical and field validation studies supporting the transition of FDA-licensed and unregulated products and medical practice guidelines to the military operational user; prototyping; risk reduction and product transition efforts for medical information technology applications such as coordination with the Program Execution Offices for integration of medical aspects into other acquisition Programs of Record; and medical simulation and training system technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: GDF – Medical Product Support and Advanced Concept Development	108.117	124.055	128.251
Description: This funding provides product support and advanced concept development of materiel products that meet the medical needs of the warfighter. Materiel development may include accelerated transition of US Food and Drug Administration (FDA)-licensed and unregulated products and medical practice guidelines to the military operational user through clinical and field validation studies, prototyping, risk reduction, and product transition efforts for medical information technology applications and medical training systems technologies.			
FY 2020 Plans: Medical Modeling and Simulation: Programs will focus on development and application of medical simulation and training capabilities for hospital care and operations. The Point-of-Injury and Trauma Simulation program will continue capability development tying together individual, collective, service and Joint training to Warfighters and Medical Professionals across the Department of Defense. The Hospital Training Simulation Systems and Evacuation and Transportation Simulation Systems programs will continue to develop, standardize and baseline the Medical Treatment Facility, Theater Hospital training (care and procedures), and en-route patient care training for interoperability. The Learning, Tactics and Technology Systems program will continue to develop the training courses, hands-on training, and exercises to develop and maintain military medical skills that enhance and maximize the training simulations, manikins and healthcare across the Department of Defense. Medical Readiness: Programs will focus on prevention of illness and injury along with optimization of human performance. The Pharmaceutical Intervention for Noise-Induced Hearing Loss-Acute Exposure Treatment program will continue development of the			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 374 / *GDF - Medical Products Support and Advanced Concept Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Capability Development Document with Key Performance Parameters and continue progress with an on-going clinical trial with a promising drug treatment candidate. Medical Combat Support: Programs will focus on operational support. The Hemorrhage Detection program will continue development of the Capability Development Document with Key Performance Parameters along with a laboratory-based technology analysis study to inform ability for the capability to be deployed to Roles 1-3. The Traumatic Brain Injury (TBI) Point of Injury Triage Device program will continue to integrate information from end user feedback, field evaluations in the deployed environment, and market research to identify a solution to aid the medical provider in the ability to triage and monitor a moderate/severe TBI. The Non-Compressible Hemorrhage Control program will continue to expand as a family of systems approach to identify potential solutions that would fulfill this gap. Efficacy of developmental items will be evaluated in clinical studies. The Joint Medical Exchange and Documentation of Information for Combat Casualty Care program will continue to conduct prototype demonstrations in operational and simulated field environments. Restoration and Healthcare Systems: Programs will focus on treatments to be used to restore form and function to warfighters as well as improve healthcare. The Traumatic Brain Injury-Drug Treatment program will continue to evaluate market research to identify possible TBI drug candidates that are ready for focused Phase II clinical trials and conduct clinical trial planning. The Post Traumatic Stress Disorder-Drug Treatment program will continue to explore options for simultaneous testing of multiple drugs using an innovative testing design. ***FY 2021 Plans:*** FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	108.117	124.055	128.251

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0604110DHA / *Medical Products Support and Advanced Concept Development*	**Project (Number/Name)** 374 / *GDF - Medical Products Support and Advanced Concept Development*

D. Acquisition Strategy

This program will test and evaluate pharmaceuticals, devices, medical support systems, and medical information technologies in government-managed clinical trials and user assessments to gather data required for military and regulatory requirements prior to production and fielding, to include FDA approval, Environmental Protection Agency registration, and safe-to-fly evaluation.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605013DHA *I Information Technology Development*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	348.226	24.306	23.780	16.344	-	16.344	16.492	16.174	16.498	16.829	Continuing	Continuing
239B: *Health Services Data Warehouse (Air Force)*	1.766	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
239F: *IM/IT Test Bed (Air Force)*	7.709	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
239G: *MHS Information Portal (MIP)*	4.187	1.407	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
239H: *IM/IT Test Bed (Air Force) at DHA*	3.910	2.588	2.740	2.796	-	2.796	2.851	2.908	2.966	3.026	Continuing	Continuing
283C: *Medical Operational Data System (MODS) (Army)*	10.999	2.632	2.759	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283D: *Army Medicine CIO Management Operations*	1.175	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283H: *Psychological and Behavioral Health - Tools for Evaluation, Risk, and Management (PBH-TERM)*	0.202	0.077	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283J: *Antibiotic Resistance Monitoring and Research (ARMoR-D)*	2.460	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283L: *Pharmacovigilance Defense Application System*	1.361	0.337	0.350	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283M: *Business Intelligence Competency Center (BICC)*	1.488	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283N: *Corporate Dental System (CDS)*	0.709	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
283P: *Mobile HealthCare Environment (MHCE)*	1.064	0.319	0.473	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
385A: *Integrated Electronic Health Record Inc 1 (Tri-Service)*	146.417	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency										Date: February 2020		
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605013DHA *I Information Technology Development*							
386A: *Virtual Lifetime Electronic Record (VLER) HEALTH (Tri-Service)*	14.464	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
423A: *Defense Center of Excellence (FHP&RP)*	3.464	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
423B: *Defense Center of Excellence (Army)*	0.996	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
423C: *Defense Center of Excellence (T2T/PBH TERM) (DHA)*	2.662	1.370	1.450	0.465	-	0.465	0.465	0.427	0.427	0.427	Continuing	Continuing
435A: *NICOE Continuity Management Tool*	2.855	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
446A: *Disability Mediation Service (DMS)*	1.286	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480B: *Defense Medical Human Resources System (Internet) (DMHRSi) (Tri-Service)*	0.585	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480C: *Defense Medical Logistics Standard Support (DMLSS) (Tri-Service)*	20.010	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480D: *Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH) (Tri-Service)*	19.772	5.357	3.868	8.714	-	8.714	8.719	8.293	8.468	8.646	Continuing	Continuing
480F: *Executive Information/ Decision Support (EI/DS) (Tri-Service)*	5.936	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480G: *Health Artifact and Image Management Solution (HAIMS) (Tri-Service)*	8.123	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480K: *Integrated Federal Health Registry Framework (Tri-Service)*	4.065	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency										Date: February 2020		
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605013DHA *I Information Technology Development*							
480M: *Theather Medical Information Program - Joint (TMIP-J) (Tri-Service)*	28.731	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480P: *Other Related Technical Activities (Tri-Service)*	8.178	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480Y: *Clinical Case Management (Tri-Service)*	2.925	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
481A: *Theather Enterprise Wide Logistics System (TEWLS) Tri-Service)*	5.127	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
482A: *E-Commerce (DHA)*	16.761	4.047	4.284	4.369	-	4.369	4.457	4.546	4.637	4.730	Continuing	Continuing
490I: *Navy Medicine Chief Information Officer*	6.237	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
490J: *Navy Medicine Online*	5.259	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480A: *Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (Tri-Service)*	5.031	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480Z: *Patient Reported Outcomes Clinical Record (Previous known as PASTOR) (Tri-Service)*	1.317	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
480R: *Joint Disability Evaluation System IT (DHA)*	0.995	0.641	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
485: *Legacy Data Repository (DHA-C)*	0.000	5.531	5.856	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
505: *Military Health System Virtual Health Program (MHS VHP)*	0.000	0.000	2.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 465												

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605013DHA *I Information Technology Development*

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key technologies to overcome medical and military unique technology barriers. Programs include Army service level support for the Medical Operational Data System (MODS); Army Medicine CIO Management Operations; Psychological and Behavioral Health – Tools for Evaluation, Risk, and Management (PBH-TERM); Antibiotic Resistance Monitoring and Research (ARMoR-D); Pharmacovigilance Defense Application System (PVDAS); Mobile HealthCare Environment (MHCE); and the Defense Center of Excellence (DCoE).

For the Air Force, the funding in this program element provides for sustainment of the IM/IT Test Bed (IMIT-TB) capability, which is a dedicated OT location and staff encompassing the entire spectrum of healthcare services and products available in MTFs, to provide risk controlled testing of designated core and interim medical applications in a live environment.

Defense Health Agency (DHA) Health Information Technology (HIT) [previously known as Tri-Service IM/IT] - DHA HIT RDT&E activities includes funding for development/integration, modernization, test and evaluation for the Defense Health Agency initiatives, and any special interest that are shared within all centralized components of the Defense Health Program (DHP).

The DHP RDT&E appropriation includes the following TMA initiatives: Electronic Commerce System (E-Commerce): This system was developed for centralized collection, integration, and reporting of accurate purchased care contracting and financial data. It provides an integrated set of data reports from multiple data sources to management, as well as tools to control the end-to-end program change management process. E-Commerce is composed of several major applications including: Contract Management (CM), utilizing Prism software to support contract action development and documentation; Resource Management (RM), employing Oracle Federal Financials and TED interface software to support the budgeting, accounting, case recoupment, and disbursement processes; Document Management, utilizing Document software to provide electronic storage, management, and retrieval of contract files; Management Tracking and Reporting, utilizing custom software to provide reports to assist in the management and tracking of changes to the managed care contracts as well as current and out year liabilities; the Purchased Care and Contractor's Resource Center web sites that provide up-to-date financial information for both TMA and the Services concerning the military treatment facilities (MTFs), and expenditures for MTF enrollee purchased care and supplemental care. E-Commerce includes an infrastructure of over 60 servers supporting development, test, and production. E-Commerce is employed by several hundred users in more than 7 different organizations. Project oversight and coordination must be provided to ensure that the needs of the disparate organizations are met without influencing system performance or support to any individual user. Server configurations must remain current with respect to security policies, user authorizations, and interactions with other systems and functions. All of these activities must be managed and coordinated on a daily basis.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency					Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program* / BA 2: *RDT&E*		R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*			
B. Program Change Summary ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	25.228	23.780	19.844	-	19.844
Current President's Budget	24.306	23.780	16.344	-	16.344
Total Adjustments	-0.922	0.000	-3.500	-	-3.500
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.922	-			
• Departmental decision to transfer Army Medical to Army Line as a readiness initiative.	-	-	-3.500	-	-3.500

Change Summary Explanation

FY 2021: Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 239B / *Health Services Data Warehouse (Air Force)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
239B: *Health Services Data Warehouse (Air Force)*	1.766	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Previously known as Assessment Demonstration Center (ADC), Health Services Data Warehouse (HSDW) addresses and focuses on Air Force Medical Service (AFMS) Data Strategy under the DoD and AF Net Centric Enterprise Services. HSDW will develop an Enterprise Data Warehouse (EDW) and Data Marts consolidating databases and transition to a SOA architecture. Program will improve data collection, aggregation, analysis, and data visualization of medical information. New data models will allow rapid development of enterprise-wide reports utilizing Business Intelligence tools.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 239B - Health Services Data Warehouse	0.000	-	-
Description: AFMS will purchase COTS software/licenses and build custom scripts for development of the data warehouse. The COTS software will expedite consolidation and cleansing of data, measure data quality, merge and organize data for reporting tools. These efforts will be used to complete the transition of CDM data into the HSDW.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	0.000	0.000	0.000	-	0.000	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 239F / *IM/IT Test Bed (Air Force)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
239F: *IM/IT Test Bed (Air Force)*	7.709	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Dedicated operational test (OT) location and staff encompassing the entire spectrum of healthcare services and products available in Military Treatment Facilities (MTFs), to provide realistic, risk controlled testing of designated core and interim medical applications in an operationally realistic environment. Critical component of ongoing capability development & fielding efforts, ensuring that each is supported by an independent, unbiased assessment of effectiveness, suitability, security, and survivability in a realistic operational environment as required by the FAR 46.103, DoD 5000, and AFI 99-103. The AFMISTB is a complementary service to existing MHS developmental, integration, interoperability, and security testing facilities, forming a logical test process continuum leading to effective deployment decisions. Outcomes include decreasing life-cycle costs of IM/IT products by catching errors early in the acquisition process where they are less costly to fix, and increasing patient safety by fielding operationally tested medical information systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 239F IM/IT Test Bed (Air Force)	0.000	-	-
Description: Provide realistic, risk controlled testing of designated core and interim medical applications in an operationally realistic environment. Critical component of ongoing capability development & fielding efforts, ensuring that each is supported by an independent, unbiased assessment of effectiveness, suitability, security, and survivability in a realistic operational environment as required by the FAR 46.103, DoD 5000, and AFI 99-103. The AFMISTB is a complementary service to existing MHS developmental, integration, interoperability, and security testing facilities, forming a logical test process continuum leading to effective deployment decisions. Outcomes include decreasing life-cycle costs of IM/IT products by catching errors early in the acquisition process where they are less costly to fix, and increasing patient safety by fielding operationally tested medical information systems.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• N/A: *N/A*	-	-	-	-	-	-	-	-	-		

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 239G / *MHS Information Portal (MIP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
239G: *MHS Information Portal (MIP)*	4.187	1.407	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The MIP enterprise solution supports Military Health System (MHS) strategic goals and facilitates informed decision-making through the delivery of robust information services and data in a timely, relevant, and actionable manner. MIP will serve as a hub for patient information, clinical decision support tools, medical readiness innovation, clinical research, and centralized, advanced operational and clinical analytics. MIP is a three-layer Defense Business System for reporting and analysis repository consisting of information used throughout the MHS from the operational to strategic level. Input from several source systems is aggregated, rationalized and normalized allowing a range of capabilities for users for near real-time reporting, deep dive analytics, and statistical analysis. MIP provides clinical information data warehousing (DW) modules, enabling Defense Health Agency to monitor, extract, and make available clinical/business data from Military Treatment Facilities (MTFs). Replaces Clinical Enterprise Intelligence Program (CEIP).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: MHS Information Portal	1.407	-	-
Description: MIP will serve as a hub for patient information, clinical decision support tools, medical readiness innovation, clinical research, and centralized, advanced operational and clinical analytics			
Accomplishments/Planned Programs Subtotals	1.407	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807793DHA: *MHS Tri-Service Information*	28.319	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 239H / *IM/IT Test Bed (Air Force) at DHA*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
239H: *IM/IT Test Bed (Air Force) at DHA*	3.910	2.588	2.740	2.796	-	2.796	2.851	2.908	2.966	3.026	Continuing	Continuing

A. Mission Description and Budget Item Justification

Continue to provide realistic, risk controlled testing of designated core and interim medical applications in an operationally realistic environment. Critical component of ongoing capability development & fielding efforts, ensuring that each is supported by an independent, unbiased assessment of effectiveness, suitability, security, and survivability in a realistic operational environment as required by the FAR 46.103, DoD 5000, and AFI 99-103. The AFMISTB is a complementary service to existing MHS developmental, integration, interoperability, and security testing facilities, forming a logical test process continuum leading to effective deployment decisions. Outcomes include decreasing life-cycle costs of IM/IT products by catching errors early in the acquisition process where they are less costly to fix, and increasing patient safety by fielding operationally tested medical information systems.

Previously reported under initiative IM/IT Test Bed (Air Force) Project Code 239F.
Operational control of funding was transferred from Air Force Medical Information Technology (IT) to Defense Health Agency Health Information Technology (DHA HIT) with the stand up of Defense Health Agency beginning in FY16. However, functionality for operational testing will remain with Air Force Medical IT. Funding will be transferred to Air Force Medical IT during year of execution.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Operational Testing Service	2.588	2.740	2.796
Description: A dedicated operational testing service, Test Bed conduct tests on various Air Force Medical Systems (AFMS). It provides risk controlled testing for designated core & interim medical applications in an operationally realistic environment. ***FY 2020 Plans:*** As in prior years, DHA will transfer funding to AF Medical IT during year of execution. AF will continue to test the DHMSM Electronic Health Record, JOMIS, Legacy TMIP, DMIX and HAIMS. Multi-Service Operational Test and Evaluation(s) will be conducted for the DHMSM Fixed Facility sites and the JOMIS Operational Medicine locations. Plans are to continue capability development & fielding efforts for half a dozen other ACAT III programs, initiate the Risk Management Framework reaccreditation for AF SG5T VPN for virtualization of IT Test Bed, and participate in at least half a dozen AF SG HPTs and requirement reviews, similar to FY18. ***FY 2021 Plans:*** As in prior years, DHA will transfer funding to AF Medical IT during year of execution. AF will continue to test the DHMSM Electronic Health Record, JOMIS, Legacy TMIP, DMIX and HAIMS. Multi-Service Operational Test and Evaluation(s) will be conducted for the DHMSM Fixed Facility sites and the JOMIS Operational Medicine locations. Plans are to continue capability			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 239H / *IM/IT Test Bed (Air Force) at DHA*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
development & fielding efforts for half a dozen other ACAT III programs, initiate the Risk Management Framework reaccreditation for AF SG5T VPN for virtualization of IT Test Bed, and participate in at least half a dozen AF SG HPTs and requirement reviews, similar to FY18. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	2.588	2.740	2.796

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Operational control of funding was transferred from Air Force Medical Information Technology (IT) to Defense Health Agency Health Information Technology (DHA HIT) with the stand up of Defense Health Agency beginning in FY16. However, functionality for operational testing will remain with Air Force Medical IT. Funding will be transferred to Air Force Medical IT during year of execution.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283C / *Medical Operational Data System (MODS) (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283C: *Medical Operational Data System (MODS) (Army)*	10.999	2.632	2.759	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding for the Medical Operational Data System (MODS) to deploy modernized data visualization capabilities to enhance Army Unit and Individual Medical Readiness Reporting. MODS provides Army leadership with a responsive and reliable human resource and readiness information management data system for all categories of military and civilian medical and support personnel. MODS provide Tri-Service support through applications such as Electronic Profile, Behavioral Health, and Medical Education.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Operational Data System (MODS)	2.632	2.759	-
Description: Information management system to provide responsive and reliable human resource and medical readiness data for all categories of military and civilian medical and support personnel. ***FY 2020 Plans:*** Funds will be used to respond to Milestone Decision Authority decisions to add new capabilities, significantly enhance, and technically upgrade existing capabilities, and use federally funded research and development center resources for system engineering and acquisition effectiveness services. These technology upgrades will support the system's ability to help strengthen the scientific basis for decision-making in patient safety and quality performance within the MHS. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021.			
Accomplishments/Planned Programs Subtotals	2.632	2.759	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	13.628	13.878	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
• BA-3, 0807721HP: *Replacement/Modernization*	0.400	0.200	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283C / *Medical Operational Data System (MODS) (Army)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Select the business, technical, and contract actions that will minimize cost, reduce program risk, and remain within schedule while meeting program objectives.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283D / *Army Medicine CIO Management Operations*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283D: *Army Medicine CIO Management Operations*	1.175	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key information technologies to overcome medical and military unique technology barriers. The Army Medicine CIO Management Operations program includes development projects for Army service level support. Specifically, the Army Medicine CIO Management Operations encompasses the Army Medical CIO's Information Management/Information Technology (IM/IT) development activities to ensure compliance with Congressional, Office of Management and Budget, DoD, and Military Health System requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 283D - Army Medicine CIO Management Operations	0.000	0.000	-
Description: The Army Medicine CIO Management Operations will provide system development, engineering, and testing requirements of interim Army medical applications in an operationally realistic, risk controlled test environment to comply with Congressional, Office of Management and Budget, DoD, and Military Health System requirements. ***FY 2020 Plans:*** No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	0.000	0.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	8.705	3.936	5.626	-	5.626	8.143	11.088	-	-	Continuing	Continuing
• BA-1, 0807721HP: *Replacement/Modernization*	0.000	0.000	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
• BA-1, 0807798HP: *Management Headquarters*	2.830	2.880	2.879	-	2.879	2.882	2.884	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283D / *Army Medicine CIO Management Operations*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807796HP: *Base Operations*	0.536	0.536	0.536	-	0.536	0.536	0.536	-	-	Continuing	Continuing

Remarks

Controls for AMCMO were reduced to support the Desktop to Datacenter initiative that transferred funding to DHA HIT, per the FY18 POM MOA.

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283H / *Psychological and Behavioral Health - Tools for Evaluation, Risk, and Management (PBH-TERM)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283H: *Psychological and Behavioral Health - Tools for Evaluation, Risk, and Management (PBH-TERM)*	0.202	0.077	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The US Army Medical Command (MEDCOM) and Defense Centers of Excellence (DCoE) have partnered to develop this information technology project for joint Service level support. The PBH-TERM platform addresses two congressionally mandated initiatives including the behavioral health management within the Warrior Transition Command (GH risk Management module/BHRM and within primary care settings (FIRST-STEPS). Further development efforts allow expansion of capabilities to deliver ongoing user support and training via web-based modules within PBH-TERM and will provide costs casings in terms of staffing requirements, conferencing and reporting.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Psychological and Behavioral Health – Tools for Evaluation, Risk, and Management (PBH-TERM)	0.077	0.000	-
Description: PBH-TERM is a web-based psychological and Behavioral Health (BH) information technology platform, which supports evidence-based, standardized and integrated BH risk and case management initiatives as well as program evaluation for the Warrior Transition Command and Patient/Soldier-Centered BH (PCBH) care in primary care settings. ***FY 2020 Plans:*** No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** End of program.			
Accomplishments/Planned Programs Subtotals	0.077	0.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	0.000	0.000	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283H / *Psychological and Behavioral Health - Tools for Evaluation, Risk, and Management (PBH-TERM)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807714HP: *other health Activities*	0.000	0.000	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
• BA-1, 0807793DHA: *MHS Tri-Service Information Management/ Information Technology (IM/IT)*	0.074	0.074	0.074	-	0.074	0.074	0.074	-	-	Continuing	Continuing

Remarks

BAG 104 funding moved to DHA starting on 01 Oct 2015 per FY 2016 POM MOA.
BAG 103 funding moved to DHA starting on 01 Oct 2016 per FY 2017 POM MOA. Moving DCoE to DHA (BA-1, 0807714HP)

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting congressional mandates and program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283J / *Antibiotic Resistance Monitoring and Research (ARMoR-D)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283J: *Antibiotic Resistance Monitoring and Research (ARMoR-D)*	2.460	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

In FY 2018, the title of project code 283J is changed from "Multi-Drug Resistant Surveillance Network (MSRN)" to "Antibiotic Resistance Monitoring and Research (ARMoR-D)".

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key information technologies to overcome medical and military unique technology barriers. The Antibiotic Resistance Monitoring and Research (ARMoR-D) program includes development projects for Army Service level support. Specifically, the ARMoR-D is the Enterprise Antibiotic Resistant Bacteria program, which collects, characterizes, and conducts epidemiologic surveillance of highly resistant bacteria. ARMoR-D promotes best clinical practices, enhances performance improvement, and focuses infection control strategies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Antibiotic Resistance Monitoring and Research (ARMoR-D)	0.000	0.000	-
Description: ARMoR-D is the Enterprise effort to collect and characterize bacterial isolates to inform best practice, such as patient management and antibiotic selection. ***FY 2020 Plans:*** No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	0.684	0.700	0.719	-	0.719	0.735	0.829	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283J / *Antibiotic Resistance Monitoring and Research (ARMoR-D)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283L / *Pharmacovigilance Defense Application System*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283L: *Pharmacovigilance Defense Application System*	1.361	0.337	0.350	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key information technologies to overcome medical and military unique technology barriers. The Pharmacovigilance Defense Application System (PVDAS) provides military providers Defense Patient Safety reports from the Food and Drug Administration (FDA) after a drugÂ´s release to market.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Pharmacovigilance Defense Application System (PVDAS)	0.337	0.350	-
Description: The Pharmacovigilance Defense Application System (PVDAS) provides military providers Defense Patient Safety reports from the Food and Drug Administration (FDA) after a drug´s release to market. ***FY 2020 Plans:*** Funding will be used to implement the testing of the drug surveillance and data visualization capabilities that were developed during fiscal year. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021.			
Accomplishments/Planned Programs Subtotals	0.337	0.350	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	0.000	0.000	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
• BA-1, 0807714HP: *Other Health Activities*	1.036	2.048	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
• BA-1, 0807798HP: *Management Headquarters*	1.600	1.650	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283L / *Pharmacovigilance Defense Application System*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283M / *Business Intelligence Competency Center (BICC)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283M: *Business Intelligence Competency Center (BICC)*	1.488	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key information technologies to overcome medical and military unique technology barriers. The Business Intelligence Competency Center (BICC) is the business intelligence capability and management processes, focused on providing actionable data at the point of service that facilitates provisioning of actionable information for MTF Commanders, AMEDD Leadership and end users.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Business Intelligence Competency Center (BICC)	0.000	0.000	-
Description: The Business Intelligence Competency Center (BICC) is the business intelligence capability and management processes, focused on providing actionable data at the point of service that facilitates provisioning of actionable information for MTF Commanders, AMEDD Leadership and end users. ***FY 2020 Plans:*** No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	0.000	0.000	-	-	-	-	-	-	-	Continuing	Continuing
• BA-3, 0807721HP: *Replacement/Modernization*	0.000	0.000	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

O&M Funding transferred to DHA starting on 01OCT2015, per FY16POM MOA.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283M / *Business Intelligence Competency Center (BICC)*

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283N / *Corporate Dental System (CDS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283N: *Corporate Dental System (CDS)*	0.709	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key information technologies to overcome medical and military unique technology barriers. The Corporate Dental System (CDS) is the Dental digital web based DICOM image capture and viewing application.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Corporate Dental System (CDS) ***Description:*** The Corporate Dental System (CDS) is the Dental digital web based DICOM image capture and viewing application.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Managment/ Information Technology*	0.114	0.115	0.117	-	0.117	-	-	-	-	Continuing	Continuing
• BA-1, 0807715HP: *Dental Care Activities*	13.386	13.656	13.851	-	13.851	-	-	-	-	Continuing	Continuing
• BA-3, 0807721HP: *Replacement/Modernization*	0.600	0.600	0.600	-	0.600	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 283P / *Mobile HealthCare Environment (MHCE)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
283P: *Mobile HealthCare Environment (MHCE)*	1.064	0.319	0.473	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command received PE 0605013 funding to identify, explore, and demonstrate key information technologies to overcome medical and military unique technology barriers. The Mobile HealthCare Environment (MHCE) is the capability of secure, bidirectional messaging and data exchange between patients, providers and clinics using any electronic device.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Mobile HealthCare Environment (MHCE)	0.319	0.473	-
Description: The Mobile HealthCare Environment (MHCE) is the capability of secure, bidirectional messaging and data exchange between patients, providers and clinics using any electronic device. ***FY 2020 Plans:*** Funding will be utilized to finalize the expansion of the MHCE functionality deployed which will be the data exchange with other systems, specifically a patient's personal health record, and enterprise systems such as their electronic health record. These system enhancements will support the Army's ability to help strengthen the scientific basis for decision-making in patient safety and quality performance within the Military Health System. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed effort and funding transferred to the Department of the Army (PE 0603115A Project EB3) as part of the Readiness Transfer for FY 2021.			
Accomplishments/Planned Programs Subtotals	0.319	0.473	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	1.477	1.551	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 283P / *Mobile HealthCare Environment (MHCE)*

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 385A / *Integrated Electronic Health Record Inc 1 (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
385A: *Integrated Electronic Health Record Inc 1 (Tri-Service)*	146.417	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Project MDAP/MAIS Code: 465

A. Mission Description and Budget Item Justification

The integrated Electronic Health Record (iEHR) was approved to provide seamless integrated sharing of electronic health data between the DoD and Department of Veterans Affairs (VA).
Commensurate with the OSD AT&L Acquisition Decision Memoranda (ADM), dated July 21, 2013 and January 2, 2014, the former joint DoD and VA iEHR program has been restructured within the DoD to pursue two separate but related healthcare information technology efforts, the DoD Healthcare Management System Modernization (DHMSM) program and a redefined iEHR program. These programs report through the PEO DoD Healthcare Management Systems (DHMS) to the USD (AT&L).

iEHR RDT&E is reported under the program element 0605013 through FY 2013 inclusive, but will be reported under new program element 0605023 for FY 2014 and out.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Integrated Electronic Health Record (iEHR) Inc 1 (Tri-Service)	0.000	-	-
Description: The iEHR primary role is health care delivery services. iEHR is a collaborative effort between the DoD and VA to share Health Care Resources to improve access to, and quality and cost effectiveness of, health care as mandated by law. This investment is deeply embedded in the MHS Enterprise Roadmap as both Departments have need for modernization/ replacement of existing legacy systems. This investment will use a combination of an open architecture approach, and the purchase (in some instances) of GOTS and COTS products.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 386A / *Virtual Lifetime Electronic Record (VLER) HEALTH (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
386A: *Virtual Lifetime Electronic Record (VLER) HEALTH (Tri-Service)*	14.464	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The primary goal of the VLER Health initiative is to enable the secure sharing of health information (i.e., demographic and clinical data) between DoD and external Federal and private sector partners which meets Meaningful Use (MU) requirements to improve healthcare quality, safety, and efficiency. By electronically sharing health information using national standards, that information can support tracking key clinical conditions, communicating that information to better coordinate care, and engaging patients in their own care. The VLER Health initiative provides clinicians with the most up-to-date information, potentially reducing redundant diagnostic tests, medical errors, paperwork and handling, and overall healthcare costs. These benefits, in turn, align with the MHS quadruple aim by ensuring that the military force is medically ready to deploy; the military beneficiary population remains healthy through focused prevention; patient care is convenient, equitable, safe, and of the highest quality; and the total cost of healthcare is reduced through the reduction of waste and focus on quality.

VLER Health funding will be reflected in the Integrated Electronic Health Record Program Element 0605023 in FY 2014 and out.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Virtual Lifetime Electronic Record (VLER) HEALTH (Tri-Service) ***Description:*** Work with Department of Veterans Affairs (VA), Department of Health & Human Services (HHS), and Private Sector to expand VLER.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807793HP: *MHS Tri-Service Information*	-	-	-	-	-	-	-	-	-		

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 423A / *Defense Center of Excellence (FHP&RP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
423A: *Defense Center of Excellence (FHP&RP)*	3.464	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

In FY15, transferred from FHP&R (Project Code 423A) to Army (Project Code 423B).

A. Mission Description and Budget Item Justification

The Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) is a United States Department of Defense (DoD) organization that provides guidance across DoD programs related to psychological health (PH) and traumatic brain injury (TBI) issues. The organization's mission statement is: "DCoE assesses, validates, oversees and facilitates prevention, resilience, identification, treatment, outreach, rehabilitation, and reintegration programs for PH and TBI to ensure the Department of Defense meets the needs of the USA's military communities, warriors and families." DCoE focuses on education and training; clinical care; prevention; research; and service member, family and community outreach. In collaboration with the Department of Veterans Affairs, the organization supports the Department of Defense's commitment of caring for service members from the time they enter service and throughout the completion of their service. DCoE also seeks to mitigate the stigma that still deters some from reaching out for help for problems such as post-traumatic stress disorder and TBI. The organization has a leadership role in collaborating with a national network of external entities[1] including non-profit organizations,[2] other DoD agencies, academia, Congress,[3] military services and other federal agencies.[4] Public health service and civil service workers, including personnel from the Department of Veterans Affairs and individuals from all the military services as well as contract personnel comprise the staff of DCoE. DCoE's goals include providing the necessary resources to facilitate the care of service members who experience TBI or PH concerns and ensuring that appropriate standards of care exist and are maintained across the Department of Defense. DCoE seeks to create, identify and share best practices, conducting necessary pilot or demonstration projects to better inform quality standards when best practices or evidence based recommendations are not readily available. Other DCoE goals include ensuring that program standards are executed and quality is consistent and creating a system in which individuals across the United States expect and receive the same level and quality of service regardless of their service branch, component, rank or geographic location. DCoE comprises eight directorates and six component centers responsible for TBI/PH issues. These DCoE entities execute programs, provide clinical care, conduct research, identify and share best practices and provide strategic planning for PH and TBI across the DoD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Center Of Excellence (FHP&RP) ***Description:*** DCoE programs and products are developed to drive innovation across the continuum of care by identifying treatment options and other clinical and research methods that deliver superior outcomes. Products range from tools customized for health care providers to electronic resources for service members and families.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 423A / *Defense Center of Excellence (FHP&RP)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 423B / *Defense Center of Excellence (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
423B: *Defense Center of Excellence (Army)*	0.996	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

Transferred from FHP&R (Project Code 423A) to Army (Project Code 423B) in FY 2015.
Transferred from Army (Project Code 423B) to DHA (Project Code 423C) in FY 2017.

A. Mission Description and Budget Item Justification

The Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury is administratively managed under the US Army Medical Command (MEDCOM) that provides guidance across DoD programs related to psychological health (PH) and traumatic brain injury (TBI) issues. DCoE focuses on education and training; clinical care; prevention; research; and Service Member, Family, and community outreach. In collaboration with the Department of Veterans Affairs, DCoE supports the DoD's commitment of caring for Service members from the time they enter service and throughout the completion of their service. DCoE also seeks to mitigate the stigma that still deters some from reaching out for help for problems such as post-traumatic stress disorder and TBI. The organization has a leadership role in collaborating with a national network of external entities to include: 1- Non-profit organizations, 2- Other DoD agencies, academia, and Congress, 3- Military services and other federal agencies and, 4- Public Health Service and civil service workers, to include personnel from the Department of Veterans Affairs and individuals from all military services as well as contractor personnel assigned to DCoE. DCoE's goals include providing the necessary resources to facilitate the care of Service members who experience TBI and/or PH concerns and ensuring that appropriate standards of care exist and are maintained across the DoD. DCoE seeks to create, identify, and share best practices; conducting necessary pilot or demonstration projects to better inform quality standards when best practices or evidence-based recommendations are not available. Additional goals include ensuring that program standards are executed and quality is consistent for all individuals throughout the United States so that they receive the same level and quality of service regardless of service branch, component, rank, or location. DCoE is comprised of a HQs element and three component centers responsible for PH/TBI issues. These DCoE directorates and centers execute programs, provide clinical care, conduct research, and identify and share best practices and provide strategic planning for all PH and TBI throughout the DoD. Management of IMIT funds are transferred from Army to DHA effective in FY 2017.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Center of Excellence (Army)	0.000	0.000	-
Description: DCoE programs and products are developed and implemented to drive innovation across the continuum of care by identifying treatment options and other clinical and research methods that deliver superior healthcare outcomes. Products range from tools customized for healthcare providers to electronic resources such as online games and mobile apps for Service Members and their Families.			
FY 2020 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 423B / *Defense Center of Excellence (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** N/A			
Accomplishments/Planned Programs Subtotals	0.000	0.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	-	-	-	-	-	-	-	-	-		
• BA-1, 0807724HP: *Military Unique - Other Medical*	-	-	-	-	-	-	-	-	-		

Remarks

Transferred from Army (Project Code 423B) to DHA (Project Code 423C) in FY 2017.

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 423C / *Defense Center of Excellence (T2T/ PBH TERM) (DHA)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
423C: *Defense Center of Excellence (T2T/PBH TERM) (DHA)*	2.662	1.370	1.450	0.465	-	0.465	0.465	0.427	0.427	0.427	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) provides the Military Health System with current and emerging psychological health and traumatic brain injury clinical and educational information. DCOE identifies gaps and prioritize needs in psychological health and TBI research, and then translate that research into clinical practice to improve patient outcomes.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Center of Excellence (DHA) T2T and PBH TERM	1.370	1.450	0.465

Description: DCoE programs and products are developed and implemented to drive innovation across the continuum of care by identifying treatment options and other clinical and research methods that deliver superior healthcare outcomes. Products range from tools customized for healthcare providers to electronic resources such as online games and mobile apps for Service Members and their Families.
Telehealth and Technology Toolkit (T2T):This project will organize a toolkit of components in the areas of PH and telehealth that can be used both within and outside DoD. The focus of the toolkit is NOT to develop duplicative components, but allow room for collaboration and remote access to tools. The T2 Toolkit consists of mobile applications, 3-Dimensional applications (apps) , and supporting websites. These applications will combine to create a system that covers many areas of Psychological Health (PH) for the Department of Defense, family members.

Psychological and Behavioral Health – Tools for Evaluation, Risk and Management (PBH-TERM) is a web-based psychological and behavioral health (BH) information technology application which supports evidence-based, standardized and integrated BH initiatives and program evaluation.

FY 2020 Plans:
Develop six mobile applications, three websites, 2 3D applications and one data warehouse (T2T). Further develop microservices for the web/mobile platform.

FY 2021 Plans:
Support for web services development software.

FY 2020 to FY 2021 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 423C / *Defense Center of Excellence (T2T/ PBH TERM) (DHA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Decrease between FY 2020 to FY 2021 is due to larger development efforts and support contracts awarded in FY 2020 as compared to FY 2021.			
Accomplishments/Planned Programs Subtotals	1.370	1.450	0.465

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130 / 2					R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*				Project (Number/Name) 435A / *NICOE Continuity Management Tool*			
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
435A: *NICOE Continuity Management Tool*	2.855	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The NICoE Continuity Management Tool (NCMT) is a business intelligence tool to perform healthcare modeling and analysis of NICoE activities.

Major capabilities defined by the NICoE in Jun 2009 and refined in Jun 2010 prior to the program procurement in Sep 2010, are subsystems that make up the NCMT end-to-end system, and were prioritized in the following order: Continuity Management Subsystem, Scheduling Subsystem, Clinical Subsystem, Research Subsystem, Training and Education Subsystem, Administration Subsystem.

Continuity Management Subsystem: Records every interaction with a particular Warrior and his or her Family as one entity to manage initial contact, referral, screening, intake, pre-admission, admission, discharge and follow-up processes.

Scheduling Subsystem: Captures, organizes, displays the complex schedules of the NICoE. Used to manage patient appointments, the utilization of facility resources including treatment rooms, modalities, provider staff and support staff.

Clinical Subsystem: A clinical application and clinical database that includes the functions that allow the user to store, classify, analyze, retrieve, interpret, present clinical data. Allows the visualization of all of the various components of the patient's health record: radiology, pathology, lab results, neurological assessments, etc.

Research Subsystem: Consists of the research database and the applications that allow the user to store, classify, analyze, retrieve, interpret, present data. Allows NICoE to aggregate data from disparate systems, both within the NICoE and from partner organizations, helping the research move faster, with more agility, and with purpose and direction supported by validated facts. Allows researchers to address many data challenges from a single system and transforms the way they do research.

Training and Education Subsystem: Provides the ability to share relevant research, diagnosis, treatment information with authorized users.

Administration Subsystem: Provides the ability to manage a portfolio of projects related to continuity of care, clinical operations, research, training and education functions in the NICoE.

The NCMT is supported by Three Contracts: Hosting (Provides Hardware, Software, Maintenance), System Integration (Implements NICoE Functional Requirements, Turns NICoE Ideas and Goals into Computer Screens, Templates, Applications – Capabilities) and Decision Support (Acquisition Management, Requirements Definition, Implementation Planning).
The NICoE's missions are to:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 435A / *NICOE Continuity Management Tool*

1) Explore novel, promising, and futuristic solutions to the complex spectrum of combat brain injury from TBI to posttraumatic stress disorder (PTSD) and other psychological injuries;

2) Ensure – through continuous outreach and high quality health care – that America embraces those who have served and sacrificed so much on its behalf; and

3) Train the next generation of providers in the most effective approaches to prevention, detection, and treatment options.

Currently the established AHLTA specification does not adequately support the specialized care and continuity management integration necessary to support NICoE clinical operations and research. Additionally, AHLTA does not support the data mining and pattern recognition requirements of the NICoE.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: NICOE Continuity Management Tool	0.000	-	-
Description: The NCMT is a tool designed to perform healthcare modeling and analysis of NICoE activities. Major capabilities include Continuity Management, Scheduling, Clinical Database, Research Database, Training and Education, and Administration.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• 4187 807783: *NCMT*	-	-	-	-	-	-	-	-	-		
• 4187 807781: *NCMT*	-	-	-	-	-	-	-	-	-		
• 1690 807781: *HEIS*	-	-	-	-	-	-	-	-	-		
• 4859 807781: *JMED*	-	-	-	-	-	-	-	-	-		
• 4940 807781: *JTFCMI*	-	-	-	-	-	-	-	-	-		
• 4940 807720: *JTFCMI*	-	-	-	-	-	-	-	-	-		
• 4273 807781: *Engineering and Deployment*	-	-	-	-	-	-	-	-	-		
• 4280 807721: *Engineering and Deployment*	-	-	-	-	-	-	-	-	-		
• 4361 807781: *IA Operational Resiliency*	-	-	-	-	-	-	-	-	-		
• 4126 807781: *Computer Network Defense*	-	-	-	-	-	-	-	-	-		

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 435A / *NICOE Continuity Management Tool*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• 4111 807781: *Computer Network Defense*	-	-	-	-	-	-	-	-	-		
• 4165 807781: *Computer Network Defense*	-	-	-	-	-	-	-	-	-		
• 4177 807781: *Computer Network Defense*	-	-	-	-	-	-	-	-	-		
• 4364 807781: *Workforce Development*	-	-	-	-	-	-	-	-	-		

Remarks

D. Acquisition Strategy

This requirement is currently contracted through the USA Medical Research Activity. The vender is Evolvent Technologies Inc.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 446A / *Disability Mediation Service (DMS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
446A: *Disability Mediation Service (DMS)*	1.286	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Disability Mediation Service (DMS): The VTA (Veteran's Tracking Application) has been the primary system to track, record, and report data for the IDES (Integrated Disability Evaluation System) process. The VTA is scheduled to sun-set, by VA (Veterans Affairs), and the data is being moved to another application. Migration of VTA to another application creates the requirement to allow data exchange between Service non-medical case management and new VA DES (Disability Evaluation System) IT application. The BEC (Benefits Executive Council) is looking to create a DMS (Disability Mediation Service), which is an integrator between the Services and VA.
The DMS will facilitate the improvement of non-medical case management tracking and IDES data/information management. It will eliminate redundant data entry within DoD (Department of Defense), improving data quality by capturing more data for operational reporting from the Services and WCP, decrease backlog by eliminating data entry duplication, and minimize impact to DoD Services by allowing the Services to continue using their existing/planned systems without requiring retraining on a new applications.
The DMS will be created from existing technology. It will provide a mediation service to help isolate each system from changes and uniqueness in the other systems and allow the Services and WCP to report and drill down on data that we capture during the exchange. This IT solution will not replace current DoD systems, but will require some modifications and enhancements to those systems to support the date exchange. WCP will support development costs for these efforts. Services will assume responsibility and POM costs for modifications, enhancements, and maintenance in the out years."

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Disability Mediation Service (DMS)	0.000	-	-
Description: The VTA (Veteran's Tracking Application) has been the primary system to track, record, and report data for the IDES (Integrated Disability Evaluation System) process. The VTA is scheduled to sun-set, by VA (Veterans Affairs), and the data is being moved to another application. Migration of VTA to another application creates the requirement to allow data exchange between Service non-medical case management and new VA DES (Disability Evaluation System) IT application. The BEC (Benefits Executive Council) is looking to create a DMS (Disability Mediation Service), which is an integrator between the Services and VA. The DMS will facilitate the improvement of non-medical case management tracking and IDES data/information management. It will eliminate redundant data entry within DoD (Department of Defense), improving data quality by capturing more data for operational reporting from the Services and WCP, decrease backlog by eliminating data entry duplication, and minimize impact to DoD Services by allowing the Services to continue using their existing/planned systems without requiring retraining on a new applications. The DMS will be created from existing technology. It will provide a mediation service to help isolate each system from changes and uniqueness in the other systems and allow the Services and WCP to report and drill down on data that we capture during the			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 446A / *Disability Mediation Service (DMS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
exchange. This IT solution will not replace current DoD systems, but will require some modifications and enhancements to those systems to support the date exchange. WCP will support development costs for these efforts. Services will assume responsibility and POM costs for modifications, enhancements, and maintenance in the out years."			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480B / *Defense Medical Human Resources System (Internet) (DMHRSi) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480B: *Defense Medical Human Resources System (Internet) (DMHRSi) (Tri-Service)*	0.585	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Medical Human Resources System – internet (DMHRSi) enables the Services to standardize and optimize the management of human resource assets across the Military Health System (MHS). DMHRSi is a Web-based system that enables improved decision making by facilitating the collection and analysis of critical human resource data. It standardizes medical human resource information and provides enterprise-wide visibility for all categories of human resources (Active Duty, Reserve, Guard, civilian, contractor, and volunteer medical personnel); improves reporting of medical personnel readiness and; streamlines business processes to improve data quality for management decision making and managing the business; provides Tri-Service visibility of associated labor costs and is source for personnel cost data.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Medical Human Resources System (internet) (DMHRSi) (Tri-Service)	0.000	-	-
Description: The Defense Medical Human Resources System – internet (DMHRSi) enables the Services to standardize and optimize the management of human resource assets across the Military Health System (MHS). DMHRSi is a Web-based system that enables improved decision making by facilitating the collection and analysis of critical human resource data. It standardizes medical human resource information and provides enterprise-wide visibility for all categories of human resources (Active Duty, Reserve, Guard, civilian, contractor, and volunteer medical personnel); improves reporting of medical personnel readiness and; streamlines business processes to improve data quality for management decision making and managing the business; provides Tri-Service visibility of associated labor costs and is source for personnel cost data.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480C / *Defense Medical Logistics Standard Support (DMLSS) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480C: *Defense Medical Logistics Standard Support (DMLSS) (Tri-Service)*	20.010	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Purpose: DMLSS provides a standard Department of Defense (DoD) medical logistics system. DMLSS suite of applications provides healthcare driven capability to support medical logistics needs for critical medical commodities - pharmaceuticals and medical/surgical supplies across continuum of care from the battlefield to tertiary care at a major DoD military treatment facility (MTF). This capability is enabled by the partnership of the Defense Logistics Agency (DLA) – Troop Support Medical and the Military Health System (MHS) providing an industry to practitioner supply chain for the medical commodity. The DMLSS DLA Wholesale (DMLSS-W) applications are funded by DLA while the garrison medical treatment facilities and theater applications are funded by the Defense Health Program.

Goal: The current DMLSS system provides full spectrum capability for medical logistics management.

Benefits: Stock control, Prime Vendor operations, preparation of procurement documents, research and price comparison for products, property accounting, biomedical maintenance operations, capital equipment, property management, inventory, and a facility management application that supports the operations of a fixed MTF physical plant and supports the Joint Commission accreditation requirements. DMLSS, in coordination with Joint Operational Medicine Information Systems (JOMIS), is providing to Services and Combatant Commanders the logistics capabilities necessary to rapidly project and sustain joint medical capabilities for medical logistics management of theater medical materiel operations. Products deployed to the theater include the DMLSS Customer Assistance Module (DCAM), a medical logistics ordering tool that allows users to view their supplier's catalog and generate electronic orders. Primarily focused on the theater environment, DCAM automates the Class VIII supply process at lower levels of care, and allows non-logisticians to electronically exchange catalog, order, and status information with their supply activity. The Joint Medical Asset Repository (JMAR) provides Enterprise asset visibility and business intelligence tool. JMAR is web-based application that provides Enterprise medical logistics (MEDLOG) asset visibility, transactional data and business intelligence (BI) and Decision Support (DS) across the MHS.

Stakeholders: MHS and DLA troop support. Customers: medical logisticians, biomedical technicians, clinical staff, and facilities management personnel in MTFs

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Medical Logistics Standard Support (DMLSS) (Tri-Service) ***Description:*** In FY 2019, DMLSS will continue work started in FY 2018 using FY 2018 RDT&E. Plans are to continue the development of FDA recall alerts medical material quality control capability.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480C / *Defense Medical Logistics Standard Support (DMLSS) (Tri-Service)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807793DHA: *MHS Tri-Service Information*	36.143	35.494	35.206	-	35.206	35.961	36.680	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480D / *Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480D: *Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH) (Tri-Service)*	19.772	5.357	3.868	8.714	-	8.714	8.719	8.293	8.468	8.646	Continuing	Continuing

A. Mission Description and Budget Item Justification

Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH) is a comprehensive, automated information system that provides a single point for assembling, comparing, using, evaluating, and storing occupational personnel exposure information, workplace environmental monitoring data, personnel protective equipment usage data, observation of work practices data, and employee health hazard educational data. DOEHRS-IH will provide for the definition, collection and analysis platform to generate and maintain a Service MemberÂ´s Longitudinal Exposure Record. DOEHRS-IH will describe the exposure assessment, identify similar exposure groups, establish a longitudinal exposure record baseline to facilitate post-deployment follow-up, and provide information to enable exposure-based medical surveillance and risk reduction.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH) (Tri-Service)	5.357	3.868	8.714
Description: Configure, enhance, and interface DOEHRS-IH modules. ***FY 2020 Plans:*** Will be used for priority development initiatives to include implementation of a DOEHRS-IH HAZMAT/SDS capability, DOEHRS-IH to DOEHRS-HC Interface, DOEHRS-IH Interface Design/Development to the Defense Medical Logistics – Enterprise Solution (DML-ES), Thermal Stress Design/Development, Confined Spaces Design/Development and Critical User Enhancements. ***FY 2021 Plans:*** Will be used for software development and significant enhancements to existing software to include implementation of a DOEHRS-IH HAZMAT/SDS capability, DOEHRS-IH to DOEHRS-HC Interface, DOEHRS-IH Interface Design/Development to the Defense Medical Logistics – Enterprise Solution (DML-ES), Thermal Stress Design/Development, Confined Spaces Design/Development and Critical User Enhancements. ***FY 2020 to FY 2021 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480D / *Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH) (Tri-Service)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Funding was increased to accomplish the development schedule.			
Accomplishments/Planned Programs Subtotals	5.357	3.868	8.714

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480F / *Executive Information/Decision Support (EI/DS) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480F: *Executive Information/ Decision Support (EI/DS) (Tri-Service)*	5.936	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

EI/DS was comprised of a central datamart Military Health System Data Repository (MDR) and several smaller datamarts: MHS Management Analysis and Reporting Tool (M2), Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), and Purchased Care Operations Systems -TRICARE Encounter Data (TED) & Patient Encounter Processing and Reporting (PEPR). Many of these operate within a Business Objects XI (BOXI) environment. EI/DS manages receipt, processing, and storage of over 155 terabytes of data from both Military Treatment Facilities (MTF) and the TRICARE purchased care network systems. These data include inpatient dispositions, outpatient encounters, laboratory, radiology, and pharmacy workload, TRICARE network patient encounter records, TRICARE mail order pharmacy patient encounter records, beneficiary demographics, MTF workload and cost information, eligibility and enrollment, Pharmacy Data Transaction Service data, customer satisfaction surveys, and data associated with the Wounded Warrior care. EI/DS provides centralized collection, storage and availability of data, in various data marts, to managers, clinicians, and analysts for the management of the business of health care. EI/DS has been broken apart into 4 separate initiatives beginning in FY17. These initiatives are (1) ESSENCE), (2) PHIMT, (3) CEIS, and (PCOS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Executive Information/Decision Support (EI/DS) (Tri-Service) ***Description:*** Development, modernization, upgrades and testing for various EI/DS modules. EI/DS has been broken apart into 4 separate initiatives beginning in FY17. These initiatives are (1) ESSENCE), (2) PHIMT, (3) CEIS, and (PCOS).	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480G / *Health Artifact and Image Management Solution (HAIMS) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480G: *Health Artifact and Image Management Solution (HAIMS) (Tri-Service)*	8.123	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Health Artifact and Image Management Solution (HAIMS) enables the DoD and the VA healthcare providers to have global access and awareness of artifacts and images (A&I) generated during the healthcare delivery process. HAIMS will provide the new capability for users throughout the MHS to be aware and have access to A&I that have been registered with the central “system”, currently on local workstations and Military Treatment Facility (MTF) Picture Archive and Communications Systems (PACs). As patients move through the continuum of care from Continental United States to Theater and then return to DoD sustaining bases facilities, healthcare A&I moves seamlessly and simultaneously with the patient. This advances several MHS strategy initiatives such as achievement of paperless record, global access of Wounded Warrior scanned documents, and an alternative to finding storage space for paper records of merging MTFs. HAIMS will supply access to VHA and other external A&I both inside and outside the Military Health System (MHS) Electronic Health Record (EHR).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Health Artifact and Image Management Solution (HAIMS) (Tri-Service) ***Description:*** Integrate new functionality into HAIMS.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480K / *Integrated Federal Health Registry Framework (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480K: *Integrated Federal Health Registry Framework (Tri-Service)*	4.065	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The purpose of an integrated Federal Health Registry capability is to provide a viable solution to fulfill a critical need for improved sharing and exchange of Service member and Veteran health information and data between the Department of Defense - Health Affairs and the Department of Veterans Affairs Veterans Health Administration communities of interest (COIs) as mandated in Section 1635 of the 2008 National Defense Authorization Act (NDAA, 2008). This ability to share and exchange vital health care data between the respective specialties of care is essential to conduct longitudinal analyses necessary to improve patient care and quality of life outcomes. To maximize efficiencies and most effectively meet the needs of the functional communities, the Centers of Excellence (CoEs) have developed a consolidated framework solution for an integrated Federal Health Registry capability. This effort provides a comprehensive solution that meets the specialty care needs of each of the Services and Veteran Affairs that are represented by the Joint DoD and VA CoEs, (Army-Extremity Trauma and Amputation Center of Excellence; Defense Health Agency-Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury; Navy-DoD/VA Vision Center of Excellence; Air Force-Hearing Center of Excellence; and National Capital Region-National Intrepid Center of Excellence). Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: integrated Health Registry Framework (Tri-Service) ***Description:*** Develop, integrate and test a common registry.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480M / *Theather Medical Information Program - Joint (TMIP-J) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480M: *Theather Medical Information Program - Joint (TMIP-J) (Tri-Service)*	28.731	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Theater Medical Information Program - Joint (TMIP-J) integrates components of the Military Health System sustaining base systems and the ServicesÂ´ medical information systems to ensure timely interoperable medical support for mobilization, deployment and sustainment of all Theater and deployed forces in support of any mission. TMIP-J enhances the clinical care and information capture at all levels of care in Theater, transmits critical information to the Theater Commander, the evacuation chain for combat and non-combat casualties, and forges the theater links of the longitudinal health record to the sustaining base and the Department of Veterans Affairs. TMIP-J is the medical component of the Global Combat Support System. TMIP-J provides information at the point of care and to the Theater tactical and strategic decision makers through efficient, reliable data capture, and data transmission to a centralized Theater database. This delivers TMIP-JÂ´s four pillars of information support through the electronic health record, integrated medical logistics, patient movement and tracking, and medical command and control through data aggregation, reporting and analysis tools for trend analysis and situational awareness. TMIP-J fulfills the premise of "Train as you fight" through the integration of components which are identical or analogous to systems from the sustaining base. TMIP-J adapts and integrates these systems to specific Theater requirements and assures their availability in the no- and low- communications settings of the deployed environment through store and forward capture and transmission technology.

TMIP-J RDT&E is reported under the program element 0605013 through FY 2013 inclusive, but will be reported under new program element 0605023 for FY 2014 and out.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Theather Medical Information Program - Joint (TMIP-J) (Tri-Service)	0.000	-	-
Description: The Theater Medical Information Program - Joint (TMIP-J) integrates components of the Military Health System sustaining base systems and the ServicesÂ´ medical information systems to ensure timely interoperable medical support for mobilization, deployment and sustainment of all Theater and deployed forces in support of any mission. TMIP-J enhances the clinical care and information capture at all levels of care in Theater, transmits critical information to the Theater Commander, the evacuation chain for combat and non-combat casualties, and forges the theater links of the longitudinal health record to the sustaining base and the Department of Veterans Affairs. TMIP-J is the medical component of the Global Combat Support System. TMIP-J provides information at the point of care and to the Theater tactical and strategic decision makers through efficient, reliable data capture, and data transmission to a centralized Theater database. This delivers TMIP-JÂ´s four pillars of information support through the electronic health record, integrated medical logistics, patient movement and tracking, and medical command and control through data aggregation, reporting and analysis tools for trend analysis and situational awareness. TMIP-J fulfills the premise of "Train as you fight" through the integration of components which are identical or analogous to systems from the			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480M / *Theather Medical Information Program - Joint (TMIP-J) (Tri-Service)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
sustaining base. TMIP-J adapts and integrates these systems to specific Theater requirements and assures their availability in the no- and low- communications settings of the deployed environment through store and forward capture and transmission technology. TMIP-J RDT&E is reported under the program element 0605013 through FY 2013 inclusive, but will be reported under new program element 0605023 for FY 2014 and out.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480P / *Other Related Technical Activities (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480P: *Other Related Technical Activities (Tri-Service)*	8.178	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Other Related Technical Activities includes funding for Information Technology activities common to multiple or all Tri-Service systems/programs and cannot be associated with any one individual Tri-Service initiative, which includes enterprise Messaging and other common IT services requirements. Additionally, in standing up the new Defense Health Agency (DHA) on October 1, 2013, one of the signature efforts of the reorganization is the establishment of a Shared Services model for the delivery of enterprise-wide support services to the Military Health System (MHS). One of the five shared services in DHA is Health Information Technology (HIT). The MHS Shared Services Portfolio Rationalization (MHS SSPR) is an initiative to capture those costs which need to be called out separately to implement the share services HIT portfolio rationalization.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Other Related Technical Activities (Tri-Service)	0.000	-	-
Description: Activities common to multiple or all Tri-Service systems/programs and cannot be associated with any one individual Tri-Service initiative, which includes MHS SSPR. Funding in FY17 used for AACE Mobile Development.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480Y / *Clinical Case Management (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480Y: *Clinical Case Management (Tri-Service)*	2.925	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Provides a seamless view of the care and the health of the patient from the origin of injury or illness to the end of the need for that episode of care. It will capture relevant events, information, documents and other data to support the overall improvement of the patient's condition utilizing medical Case Management practices. It will provide the ability to collect clinical information in support of the medical Case Manager's mission and will provide information gathered to MTFs and MSCSs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Clinical Case Management (Tri-Service)	0.000	-	-
Description: Provides a seamless view of the care and the health of the patient from the origin of injury or illness to the end of the need for that episode of care. It will capture relevant events, information, documents and other data to support the overall improvement of the patient's condition utilizing medical Case Management practices. It will provide the ability to collect clinical information in support of the medical Case Manager's mission and will provide information gathered to MTFs and MSCSs.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 481A / *Theather Enterprise Wide Logistics System (TEWLS) Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
481A: *Theather Enterprise Wide Logistics System (TEWLS) Tri-Service)*	5.127	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Theater Enterprise-Wide Logistics System (TEWLS) supports critical medical logistics warfighter requirements in a net-centric environment. It ties the national, regional, and deployed units into a single business environment. It creates the necessary links for planners, commercial partners, and AMEDD logisticians to accomplish essential care in the theater through a single customer facing portal. It removes disparate data and replaces it with a single instance of actionable data. TEWLS supports todayÂ ´s modern, non-contiguous battlefield at the regional, COCOM, and Service levels by leveraging emerging Medical Materiel Executive Agency and Theater Lead Agent infrastructure concepts to manage the entire medical supply chain from the industrial base to the end user.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Theather Enterprise Wide Logistics System (TEWLS) Tri-Service)	0.000	-	-
Description: Theater Enterprise-Wide Logistics System (TEWLS) supports critical medical logistics warfighter requirements in a net-centric environment. It ties the national, regional, and deployed units into a single business environment. It creates the necessary links for planners, commercial partners, and AMEDD logisticians to accomplish essential care in the theater through a single customer facing portal. It removes disparate data and replaces it with a single instance of actionable data. TEWLS supports todayÂ´s modern, non-contiguous battlefield at the regional, COCOM, and Service levels by leveraging emerging Medical Materiel Executive Agency and Theater Lead Agent infrastructure concepts to manage the entire medical supply chain from the industrial base to the end user.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 482A / *E-Commerce (DHA)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
482A: *E-Commerce (DHA)*	16.761	4.047	4.284	4.369	-	4.369	4.457	4.546	4.637	4.730	Continuing	Continuing

A. Mission Description and Budget Item Justification

The DHP, RDT&E appropriation includes the following TMA initiatives: Electronic Commerce System(E-Commerce): This system was developed for centralized collection, integration, and reporting of accurate purchased care contracting and financial data. It provides an integrated set of data reports from multiple data sources to management, as well as tools to control the end-to-end program change management process. E-Commerce replaces multiple legacy systems. E-Commerce consists of several major subsystems including: CM subsystem utilizing Prism software to support contract action development and documentation; the RM subsystem utilizing Oracle Federal Financials and TED interface software to support the budgeting, accounting, case recoupment, and disbursement processes; the document management subsystem utilizing Documentum software to provide electronic storage, management, and retrieval of contract files; Management Tracking and Reporting subsystem utilizing custom software to provide reports to assist in the management and tracking of changes to the managed care contracts as well as current and out year liabilities; the Purchased Care Web site that provides up-to-date financial information for both TMA and the Services concerning the military treatment facilities' (MTFs') expenditures for MTF enrollee purchased care and supplemental care. E-Commerce includes 5 major subsystems and over 60 servers supporting development, test, and production. The system will be utilized by several hundred users in more than 7 different organizations. Project oversight and coordination must be provided to ensure that the needs of the disparate organizations are met without impacting the system performance or support to any individual user. Server configurations must be kept current in terms of security policies, user authorizations, and interactions with other systems and functions. All of these activities must be managed and coordinated on a daily basis.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: E-Commerce (DHA)	4.047	4.284	4.369
Description: The DHP, RDT&E appropriation includes the following TMA initiatives: Electronic Commerce System(E-Commerce): This system was developed for centralized collection, integration, and reporting of accurate purchased care contracting and financial data. It provides an integrated set of data reports from multiple data sources to management, as well as tools to control the end-to-end program change management process. E-Commerce replaces multiple legacy systems. E-Commerce consists of several major subsystems including: CM subsystem utilizing Prism software to support contract action development and documentation; the RM subsystem utilizing Oracle Federal Financials and TED interface software to support the budgeting, accounting, case recoupment, and disbursement processes; the document management subsystem utilizing Documentum software to provide electronic storage, management, and retrieval of contract files; Management Tracking and Reporting subsystem utilizing custom software to provide reports to assist in the management and tracking of changes to the managed care contracts as well as current and out year liabilities; the Purchased Care Web site that provides up-to-date financial information for both TMA and the Services concerning the military treatment facilities' (MTFs') expenditures for MTF enrollee purchased care and supplemental care. E-Commerce includes 5 major subsystems and over 60 servers supporting development, test, and production. The system will be utilized by several hundred users in more than 7 different organizations. Project			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 482A / *E-Commerce (DHA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
oversight and coordination must be provided to ensure that the needs of the disparate organizations are met without impacting the system performance or support to any individual user. Server configurations must be kept current in terms of security policies, user authorizations, and interactions with other systems and functions. All of these activities must be managed and coordinated on a daily basis. ***FY 2020 Plans:*** Plans include more modernization to healthcare financial processing, contracts, and reporting as well as adapting to health care policy and guidance ***FY 2021 Plans:*** Plans include more modernization to healthcare financial processing, contracts, and reporting as well as adapting to health care policy and guidance ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	4.047	4.284	4.369

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807752HP: *Miscellaneous Support Activities*	0.132	0.132	0.132	-	0.132	0.135	0.138	-	-	Continuing	Continuing
• BA-3, 0807721HP: *Replacement/Modernization*	0.550	0.561	0.571	-	0.571	0.583	0.595	-	-	Continuing	Continuing

Remarks

Program transfer from project 480R.

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 490I / *Navy Medicine Chief Information Officer*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
490I: *Navy Medicine Chief Information Officer*	6.237	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Navy Medicine CIO Management Operations - IM/IT RDT&E requests will be vetted through the Bureau of Navy Medicine (BUMED) Governance Process. BUMED IM/IT CIO Governance will monitor progress and milestones every six months.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Navy Medicine Chief Information Officer (CIO) Management Operations	0.000	-	-
Description: Navy Medicine CIO Management Operations - IM/IT RDT&E requests will be vetted through the Bureau of Navy Medicine (BUMED) Governance Process. BUMED IM/IT CIO Governance will monitor progress and milestones every six months.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807781HP: *Non-Central Information Management/ Information Technology*	68.129	71.102	72.458	-	72.458	-	-	-	-	Continuing	Continuing
• BA-1, PE 0807795HP: *Base Communications - CONUS*	17.793	18.151	18.505	-	18.505	-	-	-	-	Continuing	Continuing
• BA-1, PE 0807995HP: *Base Communications - OCONUS*	2.646	2.696	2.750	-	2.750	-	-	-	-	Continuing	Continuing
• BA-3, PE 0807721HP: *Replacement/Modernization*	0.000	0.000	0.000	-	0.000	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 490J / *Navy Medicine Online*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
490J: *Navy Medicine Online*	5.259	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Navy Medicine Online System (NMO) is the designated data broker for Navy Medicine. Previous to FY 2016 Navy used funding to provide support on various initiatives. Funding transferred to Defense Health Agency starting in FY 2016. FY 2016 funding will be used for application platform usability and interoperability to deliver apps for patients and staff.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Navy Medicine Online (NMO) ***Description:*** The Navy Medicine Online System (NMO) is the designated data broker for Navy Medicine. Funding transferred to Defense Health Agency starting in FY 2016.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480A / *Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480A: *Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (Tri-Service)*	5.031	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

ESSENCE is the global, MHS monitoring capability for the early detection of health threats to force readiness. The Armed Forces Health Surveillance Center (AFHSC), the Service-specific public health centers, and Medical Treatment Facilities (MTFs) worldwide use ESSENCE on a daily basis to monitor the health status of the Military Health System (MHS) population in a time of concerns about possible biomedical terrorist attack and naturally occurring emerging infections. ESSENCE monitors the direct care MHS population, containing data on over 9 million lives. ESSENCE facilitates recognition and investigation of Tri-Service Reportable Medical Events and permits access to aggregate data and individual data to analyze the epidemiologic characteristics of health events of interest for Medical situational awareness.

This initiative is a split investment from the original Executive Information/Decision Support (EI/DS) initiative for reporting purposes.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)	0.000	-	-
Description: Web-based syndromic surveillance used worldwide to identify rapid or unusual increases in certain syndromes. Automatically alerts users to these unusual increases and uses geographic information system mapping to display occurrences geographically.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1: *0807793DHA: MHS Tri-Service Information*	6.711	6.769	6.874	-	6.874	7.024	7.164	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480Z / *Patient Reported Outcomes Clinical Record (Previous known as PASTOR) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480Z: *Patient Reported Outcomes Clinical Record (Previous known as PASTOR) (Tri-Service)*	1.317	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY2019, PASTOR name changed to Patient Reported Outcomes Clinical Record (PROCR).

A Clinical Decision Support tool to facilitate clinical management and optimize patient care by providing clinicians the ability to track patient reported outcome data as patients proceed through the clinical continuum of care. The need for standardized clinical assessments extended to business process improvements, clinical decision support, and individual and population-based outcome improvements by using validated instruments to measure patient reported outcomes and clinical treatment data in the routine delivery of care. PROCR leverages computer adaptive testing scales of the National Institutes of Health Patient Reported Outcomes Measurement Information System to fulfill two essential clinical needs: (1) seamless communication of assessment results in an actionable manner and (2) data repository for clinical research and health utilization studies.

Capabilities focus on two care communities: pain-related psychosocial factors & treatment history; and musculoskeletal (MSK) health. PROCR helps meet the 2010 National Defense Authorization Act (NDAA) recommendation for “performance measures used to determine the effectiveness of the policy in improving pain care for beneficiaries enrolled in the military health care system.”. PROCR capabilities include, but are not limited to:

- Create, store, deliver, and maintain patient reported responses to outcome measurement questions
- Patient to complete questionnaire with computer adaptive testing on self-entered electronic data device either through the internet, via a patient portal or in the clinic setting
- Staff to view the patient self- entered data (i.e., dashboard, visual representation, trends reports, and summaries)
- Provide decision support for staff based on data collected from patient (i.e., identify risk or potential problems, summarizing key information, follow trends over time, medication order sets, evaluate effectiveness of interventions).

Replaces Pain Assessment Screening Tool Outcome Registry (PASTOR)

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Patient Reported Outcomes Clinical Record (PROCR)	0.000	-	-
Description: Current capabilities completed with advanced concept technology re-modernization funding, reported under the MHS Information Technology Research Projects (MHSITRP) initiative, at pilot facilities include:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 480Z / *Patient Reported Outcomes Clinical Record (Previous known as PASTOR) (Tri-Service)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
• Capability to create, store, deliver, and maintain patient reported responses to outcome measurement questions. • Capability for patient to complete questionnaire with computer adaptive testing on self-entered electronic data device either through the internet, via a patient portal or in the clinic setting. • Capability for staff to view the patient self- entered data (ie. dashboard, visual representation, trends reports, and summaries). • Capability to provide decision support for staff based on data collected from patient (i.e. identify risk or potential problems, summarizing key information, follow trends over time, medication order sets, evaluate effectiveness of interventions). • Capability to identify and enroll patients in a pain management registry (which is a part of the PASTOR package and maintained at Madigan).			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 480R / *Joint Disability Evaluation System IT (DHA)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
480R: *Joint Disability Evaluation System IT (DHA)*	0.995	0.641	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

JDES-IT will provide case level management, tracking and reporting capability that will provide Disability Evaluation System (DES) processors and stakeholders increased transparency of a case through an automated IT solution. Case files and DES information will be electronically transferred and shared within Service components, between the Services, and with Veterans Affairs. The future environment would also include information exchange capability with existing Human Resources (HR) and medical systems to reduce duplicative entry. Funding previously reported under Disability Mediation Service prior to finalize decision on the JDES-IT.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Joint Disability Evaluation System IT (JDES-IT)	0.641	-	-
Description: JDES-IT will provide case level management, tracking and reporting capability that will provide Disability Evaluation System (DES) processors and stakeholders increased transparency of a case through an automated IT solution.			
Accomplishments/Planned Programs Subtotals	0.641	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 485 / *Legacy Data Repository (DHA-C)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
485: *Legacy Data Repository (DHA-C)*	0.000	5.531	5.856	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Legacy Data Repository (LDR) will provide the strategy, analysis, and solution to assume data management and governance for legacy Clinical and Business data for Defense Health Agency's Solutions Delivery Division systems that will be decommissioned as the Military Health System (MHS) Genesis electronic health record is deployed.

As MHS Genesis deploys to each site, legacy systems cannot decommission without a legacy data repository to safely and securely migrate data – absence a LDR solution negates and ignores the underlying requirement. Clinicians without access to legacy patient history can create a direct patient safety issue. The legacy component of a patient's Legal Medical Record will no longer be accessible once MHS Genesis rolls out.

LDR will identify, capture, organize, disseminate, and synthesize required legacy data needed to support medical information requirements for Business Intelligence (BI), Continuity of Care, and Archival in support of Defense Health Modernization Systems (DHMS) deployment plans, legacy system decommissioning plans, and operations and sustainment activities within their areas of responsibility.

This initial investment would allow the MHS to realize cost savings by decommissioning systems with overlapping capabilities to MHS Genesis, and reduce the legacy system footprint across the enterprise. Further, LDR would make legacy data available for clinicians through a clinical viewer to compliment the longitudinal record of MHS Genesis. This project will enable clinicians to holistically view a service member's medical record through both MHS Genesis and a legacy viewer. Downstream system dependent on legacy data would also be benefited through a persistence of this information.

As the LDR takes responsibility for legacy data, it must be retained within a flexible, scalable, and cost effective platform, but must also maintain the discipline of existing MHS data governance and management standards. While meeting these data governance and management standards, legacy data will be maintained in a variety of formats and degrees of normalization and structuring (i.e. discrete data, document, object, and file level).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Legacy Data Repository	5.531	5.856	-
Description: LDR will identify, capture, organize, disseminate, and synthesize required legacy data needed to support medical information requirements for Business Intelligence (BI), Continuity of Care, and Archival in support of Defense Health Modernization Systems (DHMS) deployment plans, legacy system decommissioning plans, and operations and sustainment activities within their areas of responsibility.			
FY 2020 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 485 / *Legacy Data Repository (DHA-C)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Finalize RMF - Complete RMF Control Packages (1-3) Begin System Development (Phase 1 of 2) • Project Kick Off – Create KO report • Develop initial product backlog and review criteria for minimal viable product (MVP) with government • Complete Development Sprints – At each sprint deliver the following: Product backlog burndown chart, development velocity metrics, sprint burndown chart, and meeting minutes for the sprint planning, sprint review, and product backlog planning meetings. • Phase 1 Delivery – Create System Engineer Risk Assessment and document Promote to the Field (PTTF) authority approval. • Software Hand-Off Code Freeze and software Installation GO LIVE – Deliver software delivery report for each layer (presentation, logic, and data). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** RDT&E decreases due to requirements completion in FY20.			
Accomplishments/Planned Programs Subtotals	5.531	5.856	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605013DHA / *Information Technology Development*	Project (Number/Name) 505 / *Military Health System Virtual Health Program (MHS VHP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
505: *Military Health System Virtual Health Program (MHS VHP)*	0.000	0.000	2.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Purpose: Establish a unified MHS program to augment military medicine with robust 'anywhere' virtual health capabilities.
The program will include three distinct capabilities in order to meet its initial expected business outcome. The first capability will incorporate secure clinical VTC (synchronous visits) to enable a provider in one location to offer diagnosis and treatment to a patient in another location. Synchronous visits can take place between a provider and patient at different MTFs, or at the patient's location (e.g. their home or other location deemed appropriate by the provider). Synchronous visits at the patient's location can be conducted for primary or specialty care. Primary and Specialty Care appointments via synchronous visits will enable health care anytime, anywhere. The second capability incorporates an Asynchronous secure portal or teleconsultation portal, to enable a pool of specialty care providers globally to deliver timely clinical advice, primarily in operational settings where expertise is scarce, but also in garrison when needed. The portal facilitates 'store and forward' transmission of electronic medical information and associated digital images between health care providers. Specialty clinicians provide expert advice and guidance to the patient's attending physicians, assisting them in the disposition or local treatment options. The third capability is remote health monitoring, to collect, track, and transmit biometric data from the patient via a secure portal to an MTF. The data is accessed by a care coordinator or health care provider at the MTF to provide real-time medical interventions that can improve a patient's health and quality of life.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Military Health System Virtual Health Program (MHS VHP)	-	2.000	-
Description: GOAL: The MHS VHP will connect our beneficiaries to health care globally to increase readiness, access, quality, and patient safety. BENEFIT: Using VH, the best of MHS Medicine across the world can be brought to the patient wherever they are – deployed or in garrison. As a modality without geographic limits, VH extends access to quality primary care, behavioral health, and medical specialty care to remote locations where beneficiaries may be geographically separated from comprehensive Military Treatment Facility (MTF) based care, and where such care is not readily available in the surrounding community. Additionally, VH can help the MHS use its clinical capacity more effectively; cross-leveraging clinical expertise when and where it is needed.			
FY 2020 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605013DHA / *Information Technology Development*	**Project (Number/Name)** 505 / *Military Health System Virtual Health Program (MHS VHP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Initial researsh and development of interfaces, potential software purchases that will enable integration of MHS Virtual Health Enterprise platform to DoD Electronic Health Record as well as other Enterprise system, and potential customization needed to meet Military Health Systems unique requirements. Identify future requirements that will be funded by RDTE in FY21 and out. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Start up of new version of the program begins in FY20.			
Accomplishments/Planned Programs Subtotals	-	2.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

To be determined as program matures.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605023DHA *I Integrated Electronic Health Record (iEHR)*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	48.426	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
444A: *Integrated Electronic Health Record Inc 1/ Defense Medical Information Exchange (DMIX)*	41.148	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
444B: *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*	4.720	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
449A: *Virtual Lifetime Electronic Record (VLER) HEALTH*	2.558	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 465												

A. Mission Description and Budget Item Justification

In March 2008, the MHS embarked upon Electronic Health Record (EHR) modernization planning, establishing the initial Electronic Health Records Way Ahead (EHRWA).

In March 2011, the Program was expanded to include the VA in a joint initiative to implement a new, integrated electronic health record for both Departments, called the Integrated Electronic Health Record (iEHR) program.

Secretary Hagel's Memorandum titled "Integrated Electronic Health Records," dated May 2013, provided additional direction to the program:

• DoD shall continue near-term coordinated efforts with VA to develop data federation, presentation, and interoperability. This near-term goal shall be pursued as a first priority separately from the longer-term goal of health record information technology (IT) modernization.

• DoD shall pursue a full and open competition for a core set of capabilities for EHR modernization.

To fulfill Secretary Hagel's directive, parallel programs have been defined, splitting the original iEHR program into two distinct areas. In the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) Acquisition Decision Memoranda (ADM), dated June 21, 2013 and January 2, 2014, the former joint DoD and VA Integrated Electronic Health Record (iEHR) program was restructured to pursue two separate but related healthcare information technology efforts, the DoD Healthcare Management System Modernization (DHMSM) program and a newly defined iEHR focused on providing seamless integrated sharing of electronic health

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605023DHA *I Integrated Electronic Health Record (iEHR)*

data between the DoD and VA to be called Defense Medical Information Exchange (DMIX). The remaining iEHR Increment 1 (iEHR Inc 1) was significantly de-scoped to only the Medical Single Sign-on/Context management (MSSO/CM) implemented at James A. Lovell Federal Health Care Center (JAL FHCC).

iEHR RDT&E is reported under the program element (PE) 0605013 through FY 2013 inclusive, but iEHR, VLER Health and DHMSM will be reported under new program element 0605023 for FY 2014.

In FY 2015, PE 0605023 will report only iEHR and VLER Health since DHMSM will have its own PE starting in FY 2015.

In FY 2016 and out, only iEHR Increment 1 will be reported in PE 0605023. DHMSM will continue to be only initiative reported in PE 0605026. However, new PE 06050039 is established for DMIX for FY 2016 and out. DMIX will incorporate the previous VLER Health and JEHRI initiatives.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	0.000	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605023DHA / *Integrated Electronic Health Record (iEHR)*	Project (Number/Name) 444A / *Integrated Electronic Health Record Inc 1/ Defense Medical Information Exchange (DMIX)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
444A: *Integrated Electronic Health Record Inc 1/ Defense Medical Information Exchange (DMIX)*	41.148	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Project MDAP/MAIS Code: 465

A. Mission Description and Budget Item Justification

In March 2008, the MHS embarked upon Electronic Health Record (EHR) modernization planning, establishing the initial Electronic Health Records Way Ahead (EHRWA).

In March 2011, the Program was expanded to include the VA in a joint initiative to implement a new, integrated electronic health record for both Departments, called the Integrated Electronic Health Record (iEHR) program.

Secretary Hagel's Memorandum titled "Integrated Electronic Health Records," dated May 2013, provided additional direction to the program:

• DoD shall continue near-term coordinated efforts with VA to develop data federation, presentation, and interoperability. This near-term goal shall be pursued as a first priority separately from the longer-term goal of health record information technology (IT) modernization.

• DoD shall pursue a full and open competition for a core set of capabilities for EHR modernization.

To fulfill Secretary Hagel's directive, parallel programs have been defined, splitting the original iEHR program into two distinct areas. In the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) Acquisition Decision Memoranda (ADM), dated June 21, 2013 and January 2, 2014, the former joint DoD and VA Integrated Electronic Health Record (iEHR) program was restructured to pursue two separate but related healthcare information technology efforts, the DoD Healthcare Management System Modernization (DHMSM) program and a newly defined iEHR focused on providing seamless integrated sharing of electronic health data between the DoD and VA to be called Defense Medical Information Exchange (DMIX). The remaining iEHR Increment 1 (iEHR Inc 1) was significantly de-scoped to only the Medical Single Sign-on/Context management (MSSO/CM) implemented at James A. Lovell Federal Health Care Center (JAL FHCC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Integrated Electronic Health Record Inc 1/ Defense Medical Information Exchange (DMIX) (Tri-Service)	0.000	-	-
Description: The iEHR Increment 1 initiative achieved Full Deployment Decision November 2014 and is targeted to reach Full Deployment milestone by May 2016. Sustainment efforts for iEHR Increment 1 include the DoD sustainment of the James A			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605023DHA / *Integrated Electronic Health Record (iEHR)*	**Project (Number/Name)** 444A / *Integrated Electronic Health Record Inc 1/ Defense Medical Information Exchange (DMIX)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Lovell Federal Health Care Center (JAL FHCC) health care information technology that includes medical single sign-on/context management (MSSO/CM). Program funding is also included to maintain DoD operations at the Interagency Program Office (IPO). • The DoD/VA Interagency Program Office (IPO) was re-chartered on December 5, 2013. The mission focus is addressing and coordinating the establishment of a clinical and technical standards profile and processes for data interoperability to create seamless integration of health data for DoD and VA. The IPO will leverage national and international standards and open architecture design principles to preserve flexibility, and foster data interoperability with each other and appropriate commercial entities. The IPO will enhance existing DoD and VA efforts with The Office of the National Coordinator (ONC) for Health Information Technology within the Health and Human Services (HHS) and other national and international standards organizations and coordinate and monitor the common components required for health data sharing and interoperability. The primary deliverables include technical data interoperability architecture requirements, interface control documentation, terminology standards identification and data exchange guidance.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, PE 0807784DHA: *Information Technology Development* -	16.529	17.986	16.912	-	16.912	17.253	17.598	-	-	Continuing	Continuing
• BA-3, 0807784DHA: *Replacement/Modernization*	0.000	0.000	0.000	-	0.000	0.000	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605023DHA / *Integrated Electronic Health Record (iEHR)*	Project (Number/Name) 444B / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
444B: *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*	4.720	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

DHMSM will acquire and support deployment, and implementation of an electronic health record (EHR) system that replaces the DoD legacy MHS inpatient and outpatient EHR systems. Overarching goal of the program is to enable healthcare teams to deliver high-quality, safe care and preventive services to patients through the use of easily accessible standards-based computerized patient records resulting in: improved accuracy of diagnoses and medication; improved impact on health outcomes; increased patient participation in the healthcare process; improved patient-centered care coordination; and increased practice efficiencies in all settings, including operational environments.

DHMSM replaces DoD legacy healthcare systems with a commercial solution in use in other medical systems that is open, rendered as a modular architecture, using standards-based/non-proprietary interfaces. DHMSM will support the Department's goals of net centricity by providing a framework for full human and technical connectivity and interoperability that allows DoD users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence, and protects information from those who should not have it. Once fielded, the EHR will support the following healthcare activities for DoD's 44,000 practitioners and 9.5 million beneficiaries.

1. Clinical workflow and provider clinical decision support;
2. Capture, maintain, use, protect, preserve and share health data and information;
3. Retrieval and presentation of health data and information that is meaningful for EHR users regardless of where the patient's records are physically maintained; and
4. Analysis and management of health information from multiple perspectives to include population health, military medical readiness, clinical quality, disease management, and medical research.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: DoD Healthcare Management System Modernization (DHMSM) ***Description:*** DHMSM will be executed to deliver uniform information management options across both garrison and theater environments. DHMSM will focus on replacement of inpatient and outpatient systems, and will encompass deployment of the enterprise EHR to fixed facilities as well as expeditionary components.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605023DHA / *Integrated Electronic Health Record (iEHR)*	**Project (Number/Name)** 444B / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605023DHA / *Integrated Electronic Health Record (iEHR)*	**Project (Number/Name)** 449A / *Virtual Lifetime Electronic Record (VLER) HEALTH*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
449A: *Virtual Lifetime Electronic Record (VLER) HEALTH*	2.558	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The primary goal of the VLER Health initiative is to enable the secure sharing of health information (i.e., demographic and clinical data) between DoD and external Federal and private sector partners which meets Meaningful Use (MU) requirements to improve healthcare quality, safety, and efficiency. By electronically sharing health information using national standards, that information can support tracking key clinical conditions, communicating that information to better coordinate care, and engaging patients in their own care. The VLER Health initiative provides clinicians with the most up-to-date information, potentially reducing redundant diagnostic tests, medical errors, paperwork and handling, and overall healthcare costs. These benefits, in turn, align with the MHS quadruple aim by ensuring that the military force is medically ready to deploy; the military beneficiary population remains healthy through focused prevention; patient care is convenient, equitable, safe, and of the highest quality; and the total cost of healthcare is reduced through the reduction of waste and focus on quality

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Virtual Lifetime Electronic Record (VLER) HEALTH	0.000	-	-
Description: Pursue the primary goal of the VLER Health initiative is to enable the secure sharing of health information (i.e., demographic and clinical data) between DoD and external Federal and private sector partners which meets Meaningful Use (MU) requirements to improve healthcare quality, safety, and efficiency.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, PE 0807784: *Integrated Electronic Health Record (iEHR)*	0.000	0.000	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• BA-3, PE 0807784: *Replacement/ Modernization, Integrated Electronic Health Record*	0.000	0.000	0.000	-	0.000	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program* / BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605025DHA / *Theater Medical Information Program - Joint (TMIP-J)*

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	66.524	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
445A: *Theater Medical Information Program - Joint (TMIP-J) (Tri-Service)*	45.186	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
445B: *Operational Medicine Support*	21.338	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): M07

A. Mission Description and Budget Item Justification

TMIP-J is a suite of system applications that is currently deployed to all Services as the primary healthcare information technology (IT) system supporting the Warfighter. TMIP-J integrates components of the Service's sustaining base systems and the medical information systems to ensure timely interoperable medical support for mobilization, deployment and sustainment of Theater and deployed forces. TMIP-J enhances the clinical care and information capture at all levels of care in Theater, transmits critical information to the Theater Commander, the evacuation chain for combat and non-combat casualties, and provides input to a service member's longitudinal health record. TMIP-J provides information at the point of injury and to the Theater tactical and strategic decision makers through data capture and transmission to a single Theater Management Data Store (TMDS). Using TMDS, TMIP-J provides the integration with external systems for medical logistics, patient movement and tracking, and medical command and control and medical situational awareness. TMIP-J system components integrate to specific tactical requirements, providing for availability in no- and low- communications environment through store and forward capture and transmission technology. The Theater Medical Information Program - Joint (TMIP-J) is in sustainment; Full Deployment declared May 2016.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605025DHA / *Theater Medical Information Program - Joint (TMIP-J)*	Project (Number/Name) 445A / *Theater Medical Information Program - Joint (TMIP-J) (Tri-Service)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
445A: *Theater Medical Information Program - Joint (TMIP-J) (Tri-Service)*	45.186	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Project MDAP/MAIS Code: M07

A. Mission Description and Budget Item Justification

TMIP-J is a suite of system applications that is currently deployed to all Services as the primary healthcare information technology (IT) system supporting the Warfighter. TMIP-J integrates components of the Service's sustaining base systems and the medical information systems to ensure timely interoperable medical support for mobilization, deployment and sustainment of Theater and deployed forces. TMIP-J enhances the clinical care and information capture at all levels of care in Theater, transmits critical information to the Theater Commander, the evacuation chain for combat and non-combat casualties, and provides input to a service member's longitudinal health record. TMIP-J provides information at the point of injury and to the Theater tactical and strategic decision makers through data capture and transmission to a single Theater Management Data Store (TMDS). Using TMDS, TMIP-J provides the integration with external systems for medical logistics, patient movement and tracking, and medical command and control and medical situational awareness. TMIP-J system components integrate to specific tactical requirements, providing for availability in no- and low- communications environment through store and forward capture and transmission technology. The Theater Medical Information Program - Joint (TMIP-J) is in sustainment; Full Deployment declared May 2016.

TMIP-J RDT&E is reported under the program element 0605013 through FY 2013 inclusive, but will be reported under new program element 0605023 for FY 2014 and out.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Theater Medical Information Program - Joint (TMIP-J) (Tri-Service) ***Description:*** The Theater Medical Information Program - Joint (TMIP-J) is in sustainment; Full Deployment declared May 2016.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807793DHA: *MHS Tri-Service Information*	0.000	0.000	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
• BA-1, 0807744DHA: *Theater Medical Information Program - Joint (TMIP-J)*	73.433	32.176	27.119	-	27.119	27.663	28.218	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605025DHA / *Theater Medical Information Program - Joint (TMIP-J)*	**Project (Number/Name)** 445A / *Theater Medical Information Program - Joint (TMIP-J) (Tri-Service)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-3, 0807744DHA: *Theater Medical Information Program - Joint (TMIP-J)*	0.000	0.000	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605025DHA / *Theater Medical Information Program - Joint (TMIP-J)*	Project (Number/Name) 445B / *Operational Medicine Support*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
445B: *Operational Medicine Support*	21.338	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Support Joint Operational Medicine Information System (JOMIS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Operational Medicine Support ***Description:*** Support Joint Operational Medicine Information System (JOMIS).	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-3, 0807744DHA: *Theater Medical Information Program - Joint*	0.000	0.000	0.000	-	0.000	0.000	-	-	-	Continuing	Continuing
• BA-1, 0807744DHA **: *Theater Medical Information Program - Joint*	36.947	32.107	27.049	-	27.049	27.592	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605026DHA *I Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	780.251	27.293	14.478	18.336	-	18.336	15.751	6.012	6.132	0.000	Continuing	Continuing
483A: *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM) at DHA*	780.251	27.293	14.478	18.336	-	18.336	15.751	6.012	6.132	0.000	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 496

A. Mission Description and Budget Item Justification

DHMSM will replace the DoD legacy healthcare management systems with a commercial off-the-shelf capability that is open, modular, and standards-based with non-proprietary interfaces. DHMSM will support the Department's goals of net- centricity by providing a framework for full human and technical connectivity and interoperability that allows DoD users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence, and protects information from those who should not have it. Once fielded, the Electronic Health Record (EHR) will support the following healthcare activities for DoD's practitioners and beneficiaries:

- Clinical workflow and provider clinical decision support;
- Capture, maintain, use, protect, preserve and share health data and information;
- Retrieval and presentation of health data and information that is meaningful for EHR users regardless of where the patient's records are physically maintained; and
- Analysis and management of health information from multiple perspectives to include population health, military medical readiness, clinical quality, disease management, and medical research.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	28.326	38.256	18.336	-	18.336
Current President's Budget	27.293	14.478	18.336	-	18.336
Total Adjustments	-1.033	-23.778	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-23.778			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.033	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605026DHA / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*	**Project (Number/Name)** 483A / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM) at DHA*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
483A: *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM) at DHA*	780.251	27.293	14.478	18.336	-	18.336	15.751	6.012	6.132	0.000	Continuing	Continuing

Project MDAP/MAIS Code: 496

A. Mission Description and Budget Item Justification

The DHMSM program acquired an integrated inpatient/outpatient Best of Suite (BoS) electronic health record (EHR) solution, augmented by the Best of Breed (BoB) product(s). The overarching goal of the program is to enable healthcare teams to deliver high-quality, safe care and preventive services to patients through the use of easily accessible standards-based computerized patient records. The anticipated benefits include: improved accuracy of diagnoses and medication; improved impact on health outcomes; increased patient participation in the healthcare process; improved patient-centered care coordination; and increased practice efficiencies in all settings, including all DoD operational environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: DoD Healthcare Management System Modernization (DHMSM) Program	27.293	14.478	18.336
Description: DHMSM will replace the DoD legacy healthcare management systems with a commercial off-the-shelf capability that is open, modular, and standards-based. DHMSM will support the Department's goals of net- centricity by providing a framework for full human and technical connectivity and interoperability that allows DoD users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence, and protects information from those who should not have it. Once fielded, the EHR will support the following healthcare activities for DoD's practitioners and beneficiaries: • Clinical workflow and provider clinical decision support; • Capture, maintain, use, protect, preserve and share health data and information; • Retrieval and presentation of health data and information that is meaningful for EHR users regardless of where the patient's records are physically maintained; and • Analysis and management of health information from multiple perspectives to include population health, military medical readiness, clinical quality, disease management, and medical research.			
FY 2020 Plans: FY20 RDT&E: • Conduct Test Planning of new interfaces, patches, and of semi-annual releases.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605026DHA / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*	**Project (Number/Name)** 483A / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM) at DHA*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
• Support configuration efforts for approved enhancements. FY20 Procurement: • Purchase required commercial software licenses and perform multiple deployments of the modernized DHMSM Electronic Health Record (EHR) to Military Treatment Facilities (MTFs). • Support Deployment activities to include site visits, localized configuration, deployment activities and on-site deployment support for multiple Wave Deployments (each containing multiple MTFs and Clinics). FY20 O&M: • Operate and maintain DHMSM system, including recurring configuration, integration, and test activities, software license maintenance, hardware refresh, system hosting, and recurring change management and training as applicable. ***FY 2021 Plans:*** FY21 RDT&E: • Conduct Test Planning of new interfaces, patches, and of semi-annual releases. • Support configuration efforts for approved enhancements. FY21 Procurement: • Purchase required commercial software licenses and perform multiple deployments of the modernized DHMSM EHR to MTFs. • Support Deployment activities to include site visits, localized configuration, deployment activities and on-site deployment support for multiple Wave Deployments (each containing multiple MTFs and Clinics). FY21 O&M: • Operate and maintain DHMSM system, including recurring configuration, integration, and test activities, software license maintenance, hardware refresh, system hosting, and recurring change management and training as applicable. • Continue business management operations and contract management oversight. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 RDT&E funds decrease in accordance with acquisition schedule.			
Accomplishments/Planned Programs Subtotals	27.293	14.478	18.336

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605026DHA / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM)*	**Project (Number/Name)** 483A / *Information Technology Development - DoD Healthcare Management System Modernization (DHMSM) at DHA*

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605039DHA *I PE 0605039HP / DoD Medical Information Exchange and Interoperability*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	10.157	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
458A: *DoD Medical Information Exchange and Interoperability / Defense Medical Information Exchange (DMIX)*	10.157	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

In March 2008, the MHS embarked upon Electronic Health Record (EHR) modernization planning, establishing the initial Electronic Health Records Way Ahead (EHRWA).

In March 2011, the Program was expanded to include the VA in a joint initiative to implement a new, integrated electronic health record for both Departments, called the Integrated Electronic Health Record (iEHR) program.

Secretary Hagel's Memorandum titled "Integrated Electronic Health Records," dated May 2013, provided additional direction to the program:

• DoD shall continue near-term coordinated efforts with VA to develop data federation, presentation, and interoperability. This near-term goal shall be pursued as a first priority separately from the longer-term goal of health record information technology (IT) modernization.

• DoD shall pursue a full and open competition for a core set of capabilities for EHR modernization.

To fulfill Secretary Hagel's directive, parallel programs have been defined, splitting the original iEHR program into two distinct areas. In the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) Acquisition Decision Memoranda (ADM), dated June 21, 2013 and January 2, 2014, the former joint DoD and VA Integrated Electronic Health Record (iEHR) program was restructured to pursue two separate but related healthcare information technology efforts, the DoD Healthcare Management System Modernization (DHMSM) program and a newly defined iEHR focused on providing seamless integrated sharing of electronic health data between the DoD and VA to be called Defense Medical Information Exchange (DMIX). The remaining iEHR Increment 1 (iEHR Inc 1) was significantly de-scoped to only the Medical Single Sign-on/Context management (MSSO/CM) implemented at James A. Lovell Federal Health Care Center (JAL FHCC).

• DMIX established a roadmap outlining the future of health data sharing and viewer capabilities for DoD in support of the guidance provided by the President, Congress, and the Secretary of Defense. The roadmap defined a plan to provide a single viewer to be used by DoD and VA that displays an integrated view of a patient's medical history. The viewer leverages existing inherited DoD data-sharing capabilities, and a VA-provided data service in order to collect the patient's health data from the respective, authoritative data stores. Of the various existing viewers, VA and DoD decided to evolve Joint Legacy Viewer (JLV) as the single viewer for use by both Departments. By adopting JLV as a common viewer between DoD and VA, DMIX met the National Defense Authorization Act FY 2014 (NDAA 2014) requirement for "an integrated display of data" which allows DoD to sunset inherited legacy viewers.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605039DHA *I PE 0605039HP / DoD Medical Information Exchange and Interoperability*

iEHR RDT&E is reported under the program element (PE) 0605013 through FY 2013 inclusive, but iEHR, VLER Health and DHMSM will be reported under new program element 0605023 for FY 2014.

In FY 2015, PE 0605023 will report only iEHR and VLER Health since DHMSM will have its own PE starting in FY 2015.

In FY 2016 and out, only iEHR Increment 1 will be reported in PE 0605023. DHMSM will continue to be only initiative reported in PE 0605026. However, new PE 06050039 is established for DMIX for FY 2016 and out. DMIX will incorporate the previous VLER Health and JEHRI initiatives.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

FY 2016: Realignment from Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element (PE) 0605039-DoD Medical Information Exchange and Interoperability (-$0.843 million) to DHP RDT&E, PE 0605502-Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Program (+$0.843 million).

FY 2017: No change.

FY 2018: No change.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605039DHA / *PE 0605039HP / DoD Medical Information Exchange and Interoperability*	**Project (Number/Name)** 458A / *DoD Medical Information Exchange and Interoperability / Defense Medical Information Exchange (DMIX)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
458A: *DoD Medical Information Exchange and Interoperability / Defense Medical Information Exchange (DMIX)*	10.157	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

DMIX program will acquire the capabilities necessary to securely and reliably exchange standardized, normalized, and correlated health data with all partners through standard data/information exchange mechanisms. This allows users in different places and different organizations to access, use, and supplement health data (technical interoperability) that has a shared meaning so users (assisted by computers) are able to make care decisions (Semantic Interoperability – Level 4). DMIX manages the data exchange capability from legacy data stores in order to prepare for the transition to the modernized Electronic Health Record platform being acquired by DoD Healthcare Management System Modernization (DHMSM). DMIX consists of a family of capability initiatives supporting the seamless exchange of standardized health data among DoD, VA, other Federal agencies, and private providers as well as benefits administrators. The DMIX program provides the capability for health care providers to access and view complete and accurate patient health records from a variety of data sources thereby allowing healthcare providers to make faster and higher quality care decisions. DMIX was established in accordance with the joint memo from USD(C) and USD(AT&L) titled "Joint Memorandum on Major Defense Acquisition Program and Major Automated Information System Program Resource Transparency in Department of Defense Budget Systems" dated June 27, 2013.

In addition, Joint Electronic Health Record Interoperability (JEHRI) and Virtual Lifetime Electronic Record (VLER) Health (to include Exchange) are part of the DMIX program as a direct result of the Acquisition Decision Memorandum (ADM) signed January 2, 2014 by the Under Secretary of Defense for Acquisition, Technology and Logistic (USD AT&L). Use of the health data may be done via legacy systems, clinical mobile applications and system agnostic viewers such as the Joint Legacy Viewer (JLV). Customers include the MHS, VA, other federal agencies and over 200,000 medical care practitioners.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Medical Information Exchange (DMIX) Program	0.000	-	-
Description: Comprised of the infrastructure and services needed to provide seamless integrated sharing of electronic health data between the DoD, VA, other Federal agencies, and private sector partners that is viewable to DoD and VA providers through a joint viewer.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605039DHA / *PE 0605039HP / DoD Medical Information Exchange and Interoperability*	**Project (Number/Name)** 458A / *DoD Medical Information Exchange and Interoperability / Defense Medical Information Exchange (DMIX)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• BA-1, 0807788HP: *DoD Medical Information Exchange and Interoperability*	47.047	47.613	46.901	-	46.901	47.839	48.799	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

DMIX is a collaborative effort between the DoD and VA to share Health Care Resources to improve access to, and quality and cost effectiveness of, health care as mandated by law. This investment is deeply embedded in the MHS Enterprise Roadmap as both Departments have need for modernization/ replacement of existing legacy systems. This investment will use a combination of an open architecture approach, and the purchase (in some instances) of GOTS and COTS products.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605045DHA *I Joint Operational Medicine Information System (JOMIS)*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	127.961	49.084	41.902	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
447A: *Joint Operational Medicine Information System (JOMIS)*	127.961	49.084	41.902	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Program MDAP/MAIS Code: 521												

A. Mission Description and Budget Item Justification

The JOMIS Program will modernize, deploy, and sustain the DoD's operational medicine information systems using MHS GENESIS, while developing and fielding new theater capabilities that enable comprehensive health services to meet Warfighter requirements for military medical operations. JOMIS - MHS GENESIS is intended to function in constrained, intermittent, and non-existent communications environments while providing access to authoritative sources of clinical data. The JOMIS Program is declared Joint Interest for capability requirements to be executed under the Joint Capabilities Integration and Development System (JCIDS), with oversight by the Joint Staff J8 (Force Structure, Resources and Assessments) and the Joint Requirements Oversight Council (JROC).

The JOMIS Increment 1 Program is planned to deliver the MHS GENESIS Electronic Health Record (EHR) to meet the healthcare and dental documentation requirements validated by the JCIDS approved Theater Medical Information Requirements (TMIR) Capabilities Development Document (CDD) signed February 28, 2017. JOMIS Increment 1 is planned to deliver MHS GENESIS to replace/retire the legacy AHLTA-T and TC2 systems (under TMIP-J). The JOMIS Increment 1 Program is pre-Milestone B.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	78.136	59.902	49.260	-	49.260
Current President's Budget	49.084	41.902	0.000	-	0.000
Total Adjustments	-29.052	-18.000	-49.260	-	-49.260
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-18.000			
• Congressional Rescissions	-26.200	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.852	-			
• Programmatic change	-	-	-49.260	-	-49.260

Change Summary Explanation

FY 2021: Realignment of funding to BA 08 (Software and Digital Technology Pilot Program).

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605045DHA / *Joint Operational Medicine Information System (JOMIS)*	**Project (Number/Name)** 447A / *Joint Operational Medicine Information System (JOMIS)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
447A: *Joint Operational Medicine Information System (JOMIS)*	127.961	49.084	41.902	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The purpose of the Department of Defense (DoD) Joint Operational Medicine Information Systems (JOMIS) Program is to modernize, deploy, and sustain the DoD's operational medicine information systems using MHS GENESIS Electronic Health Record (EHR), while developing and fielding new theater capabilities that enable comprehensive health services to meet Warfighter requirements for military medical operations. JOMIS is intended to function in constrained, intermittent, and non-existent communications environments while providing access to authoritative sources of clinical data. The JOMIS Program is declared Joint Interest for capability requirements to be executed under the Joint Capabilities Integration and Development System (JCIDS) and the oversight of the Joint Requirements Oversight Council (JROC).

The goals of the JOMIS Increment 1 Program are to:
- Meet existing and emerging operational medicine requirements in the theater
- Fully leverage MHS GENESIS for medical care in Theater
- Provide two way information flow between garrison and theater environments in support of a longitudinal health record

Anticipated benefits of the JOMIS Increment 1 Program include:
- Delivery of uniform clinical information across both garrison and theater environments through the use of MHS GENESIS EHR
- Enhancements to the clinical care and information captured at all levels of care in tactical environments
- Transmission of critical information to the combatant commander, the evacuation chain for combat and non-combat casualties

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Joint Operational Medicine Information System (JOMIS)	49.084	41.902	0.000
Description: Specific contribution to mission delivery: JOMIS Increment 1 Program will serve as the primary tactical system to meet the needs of the Warfighter by enabling the provision of coordinated healthcare services. MHS GENESIS is planned to provide for key capabilities in Healthcare Services & Documentation (including Blood Management and Dental Services and Documentation. The JOMIS Increment 1 Program will also integrate MHS GENESIS for interoperability with existing Theater system capabilities for Medical Logistics, Patient Movement and Evacuation, Medical Situational Awareness and Medical Command & Control.			
FY 2020 Plans: FY 20 RDT&E:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605045DHA / *Joint Operational Medicine Information System (JOMIS)*	**Project (Number/Name)** 447A / *Joint Operational Medicine Information System (JOMIS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
• Continue software development, configuration, and other activities related to Military Health Systems (MHS) GENESIS and Theater Medical Information Program-Joint (TMIP-J) integration. • Support Department of Defense Healthcare Management System Modernization (DHMSM) Program Management Office (PMO) for Contractor Testing and Development Testing of MHS GENESIS. • Continue Operational Medicine Government Approved Laboratory (OM GAL) efforts to support planning activities, user readiness, user training, and change management activities for the Initial Operating Capability (IOC) sites. • Continue engineering and program management support from the Air Force, Army, Marine Corps, and Navy. • Enhancements to the Medical Situational Awareness in Theater/Theater Medical Data Store (MSAT/TMDS) and AHLTA-T/TC2 projects. • Theater Blood (TBLD) development, system integration and test, Contractor System Engineering, Contractor Program Management and associated training material development. • Transportation Command (TRANSCOM) Regulating and Command and Control Evacuation System (TRAC2ES). FY20 Procurement: - Support Operational Medicine (OM) Government Approved Laboratory (GAL) infrastructure: Software (SW) maintenance, hardware (HW) procurement/refresh/maintenance; includes additional operational medicine (OpMed) Mobile & Theater Blood requirements. FY20 O&M: - Prepare analyses and acquisition documentation in support of Test and Evaluation Authority to Proceed (ATP) Milestone Event. - Continue decomposition into Requirements Definition Package (RDP) to inform JOMIS Increment 1 and the delivery of future increments capability. - Continue support of Program Management Office (PMO). - Operate and maintain OM GAL Testing Facility. - Fund sustainment of TMIP-J legacy systems prior to delivery of JOMIS. - Continue engineering and program management support from the Air Force, Army, Marine Corps, and Navy.			
FY 2021 Plans: FY21 RDT&E: • Continue software development and other activities related to MHS-GENESIS Segment 2 Build 4 Gold Disk delivery. • Support the Defense Health Management System Modernization (DHMSM) program office for testing of MHS GENESIS Segment 2 Build 4 Gold Disk delivery. • Continue engineering and program management support for the Services.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605045DHA / *Joint Operational Medicine Information System (JOMIS)*	**Project (Number/Name)** 447A / *Joint Operational Medicine Information System (JOMIS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY21 Procurement: • Continue integration activities, software licenses and utilities and tools. • Continue to support maintenance of government-approved laboratory infrastructure, software maintenance, hardware procurement and technical refreshes. FY21 O&M: • Prepare analyses and acquisition documentation in support of Test and Evaluation Authority to Proceed (ATP) Milestone Event • Continue decomposition into Requirements Definition Package (RDP) to inform JOMIS Increment 1 and the delivery of future increments capability • Continue support of Program Management Office (PMO) • Operate and maintain OM GAL Testing Facility • Continue engineering and program management support from the Air Force, Army, Marine Corps, and Navy • Fund sustainment of TMIP-J legacy systems prior to delivery of PM JOMIS ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Reflects the program's updated strategy and timeline.			
Accomplishments/Planned Programs Subtotals	49.084	41.902	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Evaluate and use the most appropriate business, technical, contract and support strategies and acquisition approach to minimize costs, reduce program risks, and remain within schedule while meeting program objectives. Strategy is revised as required as a result of periodic program reviews or major decisions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605145DHA *I Medical Products and Support Systems Development*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	135.678	24.921	21.589	21.068	-	21.068	21.489	21.919	22.357	22.804	Continuing	Continuing
399A: *Hyperbaric Oxygen Therapy Clinical Trial (Army)*	27.762	0.857	0.935	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
500A: *CSI - Congressional Special Interests*	13.031	5.351	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
375: *GDF - Medical Products and Support System Development*	94.885	18.713	20.654	21.068	-	21.068	21.489	21.919	22.357	22.804	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force – Medical Products and Support Systems Development: This program element (PE) provides funding for system development and demonstration of medical commodities delivered from the various medical advanced development and prototyping Department of Defense (DoD) Components that are directed at meeting validated requirements prior to full-rate initial production and fielding, including initial operational test and evaluation and clinical trials for products that require US Food and Drug Administration approval.

Development, test, and evaluation in this PE is designed to address requirements identified through the Joint Capabilities Integration and Development System and other Department of Defense operational needs. Medical development, test, and evaluation priorities for the Defense Health Program (DHP) are guided by, and will support, the National Defense Strategy, the Joint Staff Surgeon's Joint Concept for Health Services, and other overarching DoD strategic framework documents.

Coordination occurs through the planning and execution activities of the Defense Health Agency Component Acquisition Executive (DHA CAE) as the Milestone Decision Authority for medical materiel development efforts. As technologies mature, the most promising efforts will transition to production and deployment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605145DHA *I Medical Products and Support Systems Development*

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	25.745	21.589	22.022	-	22.022
Current President's Budget	24.921	21.589	21.068	-	21.068
Total Adjustments	-0.824	0.000	-0.954	-	-0.954
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.824	-			
• Reprogrammings	-	-	-0.954	-	-0.954

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 500A: *CSI - Congressional Special Interests*		
Congressional Add: *CSI Restoral*	5.351	-
Congressional Add Subtotals for Project: 500A	5.351	-
Congressional Add Totals for all Projects	5.351	-

Change Summary Explanation

FY 2021: Programmed funding transferred to the Department of the Army (PE 0605145A Project CD6) as part of the Readiness Transfer for FY 2021.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605145DHA / *Medical Products and Support Systems Development*	Project (Number/Name) 399A / *Hyperbaric Oxygen Therapy Clinical Trial (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
399A: *Hyperbaric Oxygen Therapy Clinical Trial (Army)*	27.762	0.857	0.935	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Army, the Hyperbaric Oxygen Therapy (HBO2) clinical trials focus on research related to the development of treatment modalities using HBO2 for chronic post-concussion syndrome after mild traumatic brain injury (mTBI). Three HBO2 human clinical trials were designed to evaluate the effectiveness of HBO2 treatments for Service members who have experienced one or more concussions and who are symptomatic at, or after, the time of post-deployment health reassessments: 1- A pilot phase II (narrow population safety and effectiveness) study of hyperbaric oxygen for persistent post-concussive symptoms after mild traumatic brain injury (HOPPS), 2- Brain Injury and Mechanisms of Action of Hyperbaric Oxygen for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (BIMA), and 3- Development of Normative Datasets for Assessments Planned for Use in Patients with Mild Traumatic Brain Injury (Normal). A fourth retrospective study, Long Term Follow-up (LTFU), is focused on the lessons learned from long-term follow-up of subjects enrolled in the Department of Defense (DoD) primary HBO2 trials. To support these protocols, four HBO2 study sites were established within the Military Health System. Each of the research sites consisted of a hyperbaric oxygen chamber enclosed in a mobile trailer, a second mobile trailer for testing and evaluation of the subjects, and a third subject staging trailer. This information is intended to inform DoD policy decisions regarding the use of HBO2 therapy as a treatment for mTBI.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Hyperbaric Oxygen Therapy Clinical Trial (Army) ***Description:*** The Hyperbaric Oxygen (HBO2) clinical trials are designed to test the effectiveness of HBO2 treatments for Service members who have experienced one or more concussions and who are symptomatic at, or after, the time of post-deployment health reassessments. ***FY 2020 Plans:*** Concluded the Hyperbaric Oxygen Therapy clinical trial and other associated project effort. The project determined that no clinically statistical significance existed related to the use of hyperbaric oxygen interventions. ***FY 2021 Plans:*** Programmed funding transferred to the Department of the Army (PE 0605145A Project CD6) as part of the Readiness Transfer for FY 2021. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Programmed funding transferred to the Department of the Army (PE 0605145A Project CD6) as part of the Readiness Transfer for FY 2021.	0.857	0.935	0.000
Accomplishments/Planned Programs Subtotals	0.857	0.935	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605145DHA / *Medical Products and Support Systems Development*	**Project (Number/Name)** 399A / *Hyperbaric Oxygen Therapy Clinical Trial (Army)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The acquisition outcome of this effort is a knowledge product, with the results intended to inform DoD mTBI treatment and reimbursement policies. The decision to pursue FDA registration/off-label application of an existing drug-device combination product will be made as part of a formal decision by leadership after the DoD HBO2 trial results are reviewed. If future work using HBO2 proves beneficial in the treatment of PTSD this knowledge product would inform DoD treatment and reimbursement policies.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605145DHA / *Medical Products and Support Systems Development*	Project (Number/Name) 500A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
500A: *CSI - Congressional Special Interests*	13.031	5.351	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY 2019, the Defense Health Program funded Congressional Special Interest (CSI) directed research. The strategy for the FY 2018 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: CSI Restoral	5.351	-
FY 2019 Accomplishments: In FY 2019, the Defense Health Program funded Congressional Special Interest (CSI) directed research. The strategy for the FY 2018 Congressionally-directed research program is to stimulate innovative research through a competitive, focused, peer-reviewed medical research at intramural and extramural research sites. Because of the CSI annual structure, out-year funding is not programmed.		
Congressional Adds Subtotals	5.351	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605145DHA / *Medical Products and Support Systems Development*	Project (Number/Name) 375 / *GDF - Medical Products and Support System Development*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
375: *GDF - Medical Products and Support System Development*	94.885	18.713	20.654	21.068	-	21.068	21.489	21.919	22.357	22.804	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force-Medical Products and Support Systems Development: This funding supports materiel development activities that further system development and demonstration prior to initial full rate production and fielding of commodities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: GDF - Medical Products and Support Systems Development (GDF-MPSSD)	18.713	20.654	21.068

Description: GDF-Medical Products and Support Systems Development: This funding supports activities to support system development and demonstration prior to initial full rate production and fielding of medical commodities delivered from 0604110HP (Medical Products Support and Advanced Concept Development). Materiel development may include accelerated transition of US Food and Drug Administration (FDA)-licensed and unregulated products through clinical and field validation studies, advanced prototyping, risk reduction, operational test and evaluation, manufacturing, and product transition efforts for medical information technology applications and medical training systems technologies.

FY 2020 Plans:

Medical Modeling and Simulation: Programs will focus on development and application of medical simulation and training capabilities for hospital care and operations. Medical Simulation Training Systems will begin to develop standardized training capabilities for point of injury, trauma simulation, hospital training, along with a common platform architecture that improves medical care across the DoD.

Medical Readiness: Programs will focus on prevention of illness and injury along with optimization of human performance. The Health Readiness and Performance System will continue to refine technologies including wearable sensors to monitor non-diagnostic physiologic date in real-time to improve Warfighter health, readiness and performance, reduce casualties, and increase situational awareness.

Medical Combat Support: Programs will focus on operational support. The Next Generation Diagnostic System-Infectious Disease Panel program will continue to refine a diagnostic assay for malaria, dengue fever, chikungunya, and leptospirosis that can be use in the operational setting.

FY 2021 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605145DHA / *Medical Products and Support Systems Development*	**Project (Number/Name)** 375 / *GDF - Medical Products and Support System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2021 plans continue efforts as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	18.713	20.654	21.068

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This program will test and evaluate medical products in government-managed clinical trials in order to gather data to meet military and regulatory (e.g., FDA, Environmental Protection Agency) requirements for production and fielding.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program* / BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	355.005	66.784	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
470A: *Small Business Innovation Research (SBIR) (Army)*	324.552	58.549	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
470B: *Small Business Technology Transfer (STTR) Program*	30.453	8.235	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Small Business Innovation Research (SBIR) program was established in the Defense Health Program (DHP), Research, Development, Test and Evaluation (RDT&E) appropriation during FY 2001, and is funded in the year of execution. The objective of the DHP SBIR Program includes stimulating technological innovation, strengthening the role of small business in meeting Department of Defense (DoD) research and development needs, fostering and encouraging participation by minority and disadvantaged persons in technological innovation, and increasing the commercial application of DoD-supported research and development results. The program funds small business proposals chosen to enhance military medical research and information technology research.

The Small Business Technology Transfer (STTR) program was established in the DHP, RDT&E appropriation during FY 2015, and is funded in the year of execution. The STTR Program, although modeled substantially on the SBIR Program, is a separate program and is separately financed. Central to the program is expansion of the public/private sector partnership to include the joint venture opportunities for small businesses and nonprofit research institutions. The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations. The mission of the STTR program is to support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy. The programs' goals are to stimulate technological innovation, foster technology transfer through cooperative research and development between small businesses and research institutions, and increase private sector commercialization of innovations derived from federal research and development.

Both the SBIR and STTR programs address the President's multi-agency science and technology priority of innovation in life sciences, biology, and neuroscience through coordination with the Joint Program Committees, which manage multi-Service DHP-sponsored research.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency					Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*		R-1 Program Element (Number/Name) PE 0605502DHA *I Small Business Innovation Research (SBIR) Program*			
B. Program Change Summary ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	66.784	0.000	0.000	-	0.000
Total Adjustments	66.784	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	66.784	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	Project (Number/Name) 470A / *Small Business Innovation Research (SBIR) (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
470A: *Small Business Innovation Research (SBIR) (Army)*	324.552	58.549	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Health Agency (DHA) Small Business Innovation Research (SBIR) Program can participate in any of the three (FY.1, FY.2, and FY.3) Department of Defense (DoD) SBIR Broad Agency Announcements (BAA). The process begins with a call for topics to the Joint Program Committees (JPCs), multi-Service committees established to manage research, development, test and evaluation for DHA sponsored research. DHA SBIR topics are submitted directly to the US Army Medical Research and Materiel Command (USAMRMC) and then forwarded to the JPCs for review and internal ranking. Topic Authors brief their topics at a Topic Review Meeting attended by DHA Research& Development Directorate (J9) SBIR Program Director (PD) and personnel from the supporting USAMRMC offices. Approved DHA SBIR topics are published in DoD SBIR BAAs. Small businesses submit proposals against topics which are then evaluated by a Technical Evaluation Team (TET) made up of a Team Chief and Technical Evaluators. TETs recommend proposals for selection. All recommended proposals are reviewed by the JPCs and the DHA SBIR PD. Phase I proposal selections are announced and contract negotiations begin. Phase I contracts are awarded up to $150K for 6 months. Follow-on Phase II projects can be awarded up to $1M for 24 months. This process ensures the SBIR program addresses the multi-agency science and technology priority of innovation in life sciences, biology, and neuroscience.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Small Business Innovation Research (SBIR) Program	58.549	0.000	-
Description: The program funds small business proposals chosen to enhance military medical research and information technology research. For FY 2018, twelve DHA SBIR topics were developed for the 2018.1, 2018.2 DoD SBIR Broad Agency Announcements (BAA). Funding for each topic was based on the technical merits of the proposals submitted. ***FY 2020 Plans:*** No funding programmed. The DHA SBIR program is funded in the year of execution. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** No funding programmed. The DHA SBIR program is funded in the year of execution.			
Accomplishments/Planned Programs Subtotals	58.549	0.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

D. Acquisition Strategy

Test and evaluate commercially developed prototypes funded by the SBIR program to ensure military and regulatory requirements are met prior to production and fielding, to include Food and Drug Administration licensure and Environmental Protection Agency registration.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	Project (Number/Name) 470B / *Small Business Technology Transfer (STTR) Program*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
470B: *Small Business Technology Transfer (STTR) Program*	30.453	8.235	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Small Business Technology Transfer (STTR) is a program that expands funding opportunities in the federal innovation research and development arena. Central to the program is expansion of the public/private sector partnership to include the joint venture opportunities for small businesses and nonprofit research institutions. The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations. The program funds small business proposals that partner with a research institution, are technically meritorious, and enhance Joint Program Committee (JPC) research and development efforts. The DHA STTR Program can participate in any of the three (FY.A, FY.B, and FY.C) Department of Defense (DoD) STTR BAAs. The process begins with a call for topics to the JPCs. DHA STTR topics are submitted directly to US Army Medical Research and Materiel Command (USAMRMC) and then forwarded to the JPCs for review and internal ranking. Topic Authors brief their topics at a Topic Review Meeting attended by the DHA Research& Development Directorate (J9) STTR Program Director (PD)and personnel from the supporting USAMRMC offices. Approved DHA STTR topics are published in the DoD STTR BAA. Small businesses submit proposals against topics which are then evaluated by a Technical Evaluation Team (TET) made up of a Team Chief and Technical Evaluators. TETs recommend proposals for selection. All recommended proposals are reviewed by the JPCs and the DHA STTR PD. Phase I proposal selections are announced and contract negotiations begin. Phase I contracts are awarded up to $150K for 6 months. Follow-on Phase II projects can be awarded up to $1M for 24 months. This process ensures the STTR program addresses the multi-agency science and technology priority of innovation in life sciences, biology, and neuroscience.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Small Business Technology Transfer (STTR) Program	8.235	0.000	-
Description: STTR Program offers funding opportunities in federal research and development to small businesses. The program aims to stimulate technological innovation in DoD research and development, strengthen the role of small business in meeting DoD research and development needs, foster and encourage participation by minority and disadvantaged persons in technological innovation, and increase the commercial application of DoD-supported research or research and development results. For FY 2018, two topics were developed for the 2018.A, 2018.B DoD STTR Broad Agency Announcement (BAA). Funding for the topics was based on the merits of responses to the BAA. ***FY 2020 Plans:*** No funding programmed. The DHA STTR program is funded in the year of execution. ***FY 2020 to FY 2021 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470B / *Small Business Technology Transfer (STTR) Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
No funding programmed. The DHA SBIR program is funded in the year of execution.			
Accomplishments/Planned Programs Subtotals	8.235	0.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Test and evaluate commercially developed prototypes funded by the STTR program to ensure military and regulatory requirements are met prior to production and fielding, to include Food and Drug Administration licensure and Environmental Protection Agency registration.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0606105DHA *I Medical Program-Wide Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	394.999	70.610	69.219	48.672	-	48.672	49.645	50.638	51.651	52.692	Continuing	Continuing
305T: *USAMRIID IO&T (Army)*	109.680	0.438	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
368A: *Pacific-Based Joint Information Technology Center - Maui (JITC-Maui) (HIT)*	18.869	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
397T: *USAMRICD IO&T (Army)*	35.693	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
401A: *CONUS Laboratory Support Clinical Infrastructure (Army)*	33.693	5.253	5.358	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
432A: *OCONUS Laboratory Infrastructure Support (Army)*	63.186	13.217	14.144	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
433A: *NMRC Biological Defense Research Directorate (BDRD) (Navy)*	17.690	3.109	5.163	3.267	-	3.267	3.371	3.479	3.589	3.796	Continuing	Continuing
442A: *USARIEM Pike's Peak IO&T (Army)*	0.420	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
600A: *CSI - Congressional Special Interests*	27.613	6.872	2.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
494A: *Medical Development (Lab Support) (Navy)*	79.489	41.721	42.554	45.405	-	45.405	46.274	47.159	48.062	48.896	Continuing	Continuing
376A: *GDF - Medical Program-Wide Activities*	8.666	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command receives funding for research infrastructure management support at select continental United States and outside the continental US laboratories and clinical trial sites; work is done in collaboration with DoD Military Treatment Facilities. This program element does not fund research. It funds the infrastructure support staff enabling research scientists to conduct bio-surveillance and early-to-late-stage clinical investigations into biologics, drugs, protectants, device technologies, and knowledge products. The funding provides for the sustainment of technical subject matter expertise, independent of the number of assigned projects, and the costs related to the initial outfitting and transition (IO&T) of research, development, test, and evaluation medical laboratories funded under multi-year military construction (MILCON) projects. These IO&T funds are designated as appropriations other than MILCON.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0606105DHA *I Medical Program-Wide Activities*

The Office of the Assistant Secretary of Defense for Health Affairs (Force Health Protection & Readiness) receives funds to provide management support for research projects at Pacific Joint Information Technology Center (P-JITC).

For the Navy Bureau of Medicine and Surgery, this program element includes facility operational funding for the Medical Biological Defense research sub-function of the Naval Medical Research Center (NMRC) Biological Defense Research Directorate (BDRD). The program mission is mandated by the Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense (JRO-CBRND) baseline capabilities assessment of chemical and biological passive defense. The primary function is research on countermeasures to biological threat agents, development of assays to detect biological threat agents, and bioforensic analysis of biological threat agents.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	70.755	67.219	68.563	-	68.563
Current President's Budget	70.610	69.219	48.672	-	48.672
Total Adjustments	-0.145	2.000	-19.891	-	-19.891
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	2.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.145	-			
• Reprogrammings	-	-	-19.891	-	-19.891

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 600A: *CSI - Congressional Special Interests*		
Congressional Add: *PC 466 - CSI Core Restoral Medical Program-wide Activities*	6.872	2.000
Congressional Add Subtotals for Project: 600A	6.872	2.000
Congressional Add Totals for all Projects	6.872	2.000

Change Summary Explanation

FY 2021: Programmed effort and funding transferred to the Department of the Army in FY 2021 (PE 06066105A Project CD7) as part of the Readiness Transfer for FY 2021.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 305T / *USAMRIID IO&T (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
305T: *USAMRIID IO&T (Army)*	109.680	0.438	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Funding supports the initial outfitting and transition (IO&T) costs associated with military construction (MILCON) for the US Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Maryland.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: USAMRIID IO&T (Army)	0.438	0.000	-
Description: US Army Medical Research Institute of Infectious Diseases in Fort Detrick, Maryland, IO&T costs associated with MILCON. ***FY 2020 Plans:*** No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** USAMRIID IO&T program completed in FY 2019.			
Accomplishments/Planned Programs Subtotals	0.438	0.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 368A / *Pacific-Based Joint Information Technology Center - Maui (JITC-Maui) (HIT)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
368A: *Pacific-Based Joint Information Technology Center - Maui (JITC-Maui) (HIT)*	18.869	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Pacific Joint Information Technology Center (Pacific JITC) (DHA HIT Directorate) was established to rapidly research, test and develop Warfighter medical solutions and products, through pilot projects or prototypes that provide mission critical value and actionable information to the DoD, including Services, combatant commanders, and the Department of Veterans Affairs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Pacific-Based Joint Information Technology Center - Maui (JITC-Maui) (HIT) ***Description:*** Management support for research projects at Pacific Joint Information Technology Center (JITC).	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 397T / *USAMRICD IO&T (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
397T: *USAMRICD IO&T (Army)*	35.693	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Funding supports the initial outfitting and transition (IO&T) costs associated with military construction (MILCON) for the US Army Medical Research Institute of Chemical Defense (USAMRICD), Aberdeen Proving Ground, Maryland.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: USAMRICD IO&T (Army) ***Description:*** The USAMRICD, Aberdeen Proving Ground, Maryland, IO&T costs associated with MILCON.	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 401A / *CONUS Laboratory Support Clinical Infrastructure (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
401A: *CONUS Laboratory Support Clinical Infrastructure (Army)*	33.693	5.253	5.358	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Continental United States Laboratory Infrastructure Support funding provides infrastructure and management support for selected laboratories and research sites, enabling basic to late stage clinical investigations on medical products through collaborative efforts with the Military Health System's (MHS) Military Treatment Facilities (MTFs). MTFs provide access to the patient populations who will benefit the most from the medical products and capabilities being developed. The funds support the retention of technical subject matter expertise, independent of the number of assigned projects. The infrastructure funds also support Institutional Review Board functions, research technical support, statistical support, grant writing assistance, and other essential functions for maintaining research in MTFs. The funds do not support research, but provide the infrastructure support enabling MTF investigators to compete for research, development, test, and evaluation (RDT&E) research funds.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: CONUS Laboratory Support Clinical Infrastructure (Army)	5.253	5.358	0.000
Description: Management support for research infrastructure at select laboratories and research sites that conduct basic to late-stage clinical research and evaluation of investigational products, such as biologics, drugs, and devices to treat/prevent polytrauma (multiple traumatic injuries), through collaborative efforts with the MHS MTFs.			
FY 2020 Plans: The CONUS Laboratory Support Clinical Infrastructure project supports efforts for military medical research. These efforts will include support staff engaged in multiple clinical investigations and performing critical roles in research subject engagement, development and review of research protocols, and the creation, analysis, and communication of research data. Examples of the clinical research specialties to be supported by the program are: clinical research associate, study coordinator, human subjects protection scientist, budget analyst, computer information technology and management specialist, biomedical scientist/ molecular biologist, statistician, database manager, biostatistics/bioinformatics analyst, biobank manager, research assistant, and clinical research coordinator. Efforts with the funding will include: support for clinical investigations, submission for external funding applications, sustainment of a Clinical Investigation Committee to review research protocols and provide research support services, solicitation of collaborative research partnerships with non-federal organizations, utilization of funding opportunities database to assist MTF investigators, and identification of ways to improve submission competitiveness.			
FY 2021 Plans: Programmed effort and funding transferred to the Department of the Army in FY 2021 (PE 06066105A Project CD7).			
FY 2020 to FY 2021 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0606105DHA / *Medical Program-Wide Activities*	**Project (Number/Name)** 401A / *CONUS Laboratory Support Clinical Infrastructure (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	5.253	5.358	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 432A / *OCONUS Laboratory Infrastructure Support (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
432A: *OCONUS Laboratory Infrastructure Support (Army)*	63.186	13.217	14.144	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Outside of the Continental United States (OCONUS) Laboratory Infrastructure Support provides management support for research infrastructure at selected overseas laboratories and research sites that conduct biosurveillance and basic to late-stage clinical research and evaluation of investigational products, such as biologics, drugs, protectants, technologies, and knowledge products to treat/prevent infectious diseases for the purpose of protecting the Warfighter; this is accomplished through collaborative efforts with the respective host nation governments. These sites are the US Army Medical Research Directorate-Kenya (USAMRD-K) in Nairobi, Kenya, the US Army Medical Research Directorate-Georgia (USAMRD-G) in Tbilisi, Georgia, and the US Army Medical Directorate-Armed Forces Research Institute of Medical Sciences (USAMD-AFRIMS) in Bangkok, Thailand. USAMRD-G is the newest laboratory, and provides support in the Caucasus region, similar to that provided by the laboratories in Kenya and Thailand to East Africa and Southeast Asia regions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: OCONUS Laboratory Infrastructure Support (Army)	13.217	14.144	0.000
Description: Management support for research infrastructure at selected overseas laboratories and research sites is integral to support the development and testing of improved means of predicting, detecting, preventing, and treating infectious disease threats to the US military, as well as support for surveillance, training, research, and response activities for emerging infectious disease threats that could affect Service members in those regions. Supported OCONUS laboratories are the US Army Medical Directorate-Armed Forces Research Institute of Medical Sciences (AFRIMS) in Bangkok, Thailand; the US Army Research Directorate-Kenya (USAMRD-K) in Nairobi, Kenya; and the US Army Medical Research Directorate-Georgia (USAMRD-G) in Tbilisi, Georgia.			
FY 2020 Plans: Funding provides for the sustainment of the administration and infrastructure support for USAMD-AFRIMS, USAMRD-K, and USAMRD-G laboratories. These laboratories provide medical research platforms for surveillance, testing, and evaluation of products to inform the development of interventions for military-relevant endemic diseases. Administration and infrastructure support efforts include resource management, logistics, safety, information technology activities, salaries, utilities, maintenance, transportation, shipping, vehicle maintenance and generator fuel.			
FY 2021 Plans: Programmed effort and funding transferred to the Department of the Army in FY 2021 (PE 06066105A Project CD7).			
FY 2020 to FY 2021 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0606105DHA / *Medical Program-Wide Activities*	**Project (Number/Name)** 432A / *OCONUS Laboratory Infrastructure Support (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Programmed effort and funding transferred to the Department of the Army in FY 2021.			
Accomplishments/Planned Programs Subtotals	13.217	14.144	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 433A / *NMRC Biological Defense Research Directorate (BDRD) (Navy)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
433A: *NMRC Biological Defense Research Directorate (BDRD) (Navy)*	17.690	3.109	5.163	3.267	-	3.267	3.371	3.479	3.589	3.796	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Navy Bureau of Medicine and Surgery, this program element (PE) includes funds for the Medical Biological Defense research sub-function of the Naval Medical Research Center (NMRC) Biological Defense Research Directorate (BDRD) at Fort Detrick, Maryland. Operational costs are significant by virtue of being at Fort Detrick, a highly secure National Interagency Biodefense Campus (NIBC). Uninterrupted utilities to all buildings on NIBC are provided by a Central Utility Plant (CUP) whose capacity all partners on the NIBC are required to buy into. The annual projected costs are distributed amongst the partners based on square feet and number of occupants of the building. Further, the NIBC campus is a fenced physical location with Entry Control Points (ECP). The partners on the campus, therefore, are required to pay for the guard force manning their ECP.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: NMRC Biological Defense Research Directorate (BDRD) (Navy)	3.109	5.163	3.267
Description: Funding for this project provides core funding for facility and security requirements in support of Biological Defense Research. The remainder of the program is sustained by the competitive acquisition of research funding. ***FY 2020 Plans:*** Continue to provide funding for the Central Utility Plant, Entry Control Points Security Force and operational costs necessary to achieve the mission critical functions of Biological Weapon (BW) agent detection, analysis, and deployable BW diagnostic lab service. ***FY 2021 Plans:*** Continue plans as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The adjustment of $2.0M is due to right-sizing project 433A based on historical execution data. The $2.0M would be moved to Lab Support project 494A in order to allow for additional investment across all the R&D medical labs to cover increased fixed and recurring base operating costs (BOS), which would allow for a more sustained investment in core S&T capabilities, as well as affording the laboratories flexibility in accommodating increased workloads and surge requirements.			
Accomplishments/Planned Programs Subtotals	3.109	5.163	3.267

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0606105DHA / *Medical Program-Wide Activities*	**Project (Number/Name)** 433A / *NMRC Biological Defense Research Directorate (BDRD) (Navy)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0606105DHA / *Medical Program-Wide Activities*	**Project (Number/Name)** 442A / *USARIEM Pike's Peak IO&T (Army)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
442A: *USARIEM Pike's Peak IO&T (Army)*	0.420	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Funding supports the initial outfitting and transition (IO&T) research, development, test and evaluation (RDT&E) costs associated with military construction (MILCON) for the US Army Research Institute of Environmental Medicine (USARIEM) at Pike's Peak, Colorado.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: USARIEM Pike's Peak IO&T (Army)	0.000	0.000	-
Description: Supports the initial outfitting and transition (IO&T) research, development, test and evaluation (RDT&E) costs associated with MILCON for the US Army Research Institute of Environmental Medicine (USARIEM) at Pike's Peak, Colorado. ***FY 2020 Plans:*** No funding programmed. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** No funding programmed.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 600A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
600A: *CSI - Congressional Special Interests*	27.613	6.872	2.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The FY 2019 DHP Congressional Special Interest (CSI) Restoral funding is directed toward core research initiatives in Program Element (PE) 0606105 - Medical Program-Wide Activities. Because of the CSI annual structure, out-year funding is not programmed.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: PC 466 - CSI Core Restoral Medical Program-wide Activities	6.872	2.000
FY 2019 Accomplishments: CSI Restoral		
FY 2020 Plans: CSI Restoral		
Congressional Adds Subtotals	6.872	2.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 494A / *Medical Development (Lab Support) (Navy)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
494A: *Medical Development (Lab Support) (Navy)*	79.489	41.721	42.554	45.405	-	45.405	46.274	47.159	48.062	48.896	Continuing	Continuing

A. Mission Description and Budget Item Justification

For the Navy Bureau of Medicine and Surgery, this program element (PE) includes costs related to laboratory management and support salaries of government employees that are not paid from science/research competitively awarded funding. The Outside Continental U.S. (OCONUS) laboratories conduct focused medical research on vaccine development for Malaria, Diarrhea Diseases, and Dengue Fever. In addition to entomology, the labs focus on HIV studies, surveillance and outbreak response under the Global Emerging Infections Surveillance (GEIS) program, and risk assessment studies on a number of other infectious diseases that are present in the geographical regions where the laboratories are located. The CONUS laboratories conduct research on Military Operational Medicine, Combat Casualty Care, Diving and Submarine Medicine, Infectious Diseases, Environmental and Occupational Health, Directed Energy, and Aviation Medicine and Human Performance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Medical Development (Lab Support) (Navy)	41.721	42.554	45.405
Description: Funding in this project covers operating and miscellaneous support costs at RDT&E laboratories, including facility, equipment and civilian personnel costs that are not directly chargeable to RDT&E projects. Excluded costs include military manpower and related costs, non-RDT&E base operating costs, and military construction costs, which are included in other appropriate programs. ***FY 2020 Plans:*** Continue to provide operating support for 8 medical RDT&E labs across 15 research focus areas with the goal of developing products and strategies that protect, treat, rehabilitate and enhance the performance of the Warfighter. Requested funding will enable the labs to meet or exceed science performance metric objectives. ***FY 2021 Plans:*** Continue plans as outlined in FY 2020. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** An additional $2 million in order to allow for additional investment across all the R&D medical labs to cover increased fixed and recurring base operating costs (BOS), which would allow for a more sustained investment in core S&T capabilities, as well as affording the laboratories flexibility in accommodating increased workloads and surge requirements.			
Accomplishments/Planned Programs Subtotals	41.721	42.554	45.405

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0606105DHA / *Medical Program-Wide Activities*	**Project (Number/Name)** 494A / *Medical Development (Lab Support) (Navy)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0606105DHA / *Medical Program-Wide Activities*	Project (Number/Name) 376A / *GDF - Medical Program-Wide Activities*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
376A: *GDF - Medical Program-Wide Activities*	8.666	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Medical Command receives funding for research infrastructure management support at select continental United States and outside the continental US laboratories and clinical trial sites. Work is done in collaboration with DoD Military Treatment Facilities. This project does not fund research. It funds the infrastructure support staff enabling research scientists to conduct bio-surveillance and early-to-late-stage clinical investigations into biologics, drugs, protectants, device technologies, and knowledge products. The funding provides for the sustainment of technical subject matter expertise, independent of the number of assigned projects, and the costs related to the initial outfitting and transition (IO&T) of research, development, test and evaluation medical laboratories funded under multi-year military construction (MILCON) projects. These IO&T funds are designated as appropriations other than MILCON.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 376A: GDF – Medical Program-Wide Activities	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency											Date: February 2020	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0607100DHA *I Medical Products and Capabilities Enhancement Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	98.276	15.140	16.819	17.215	-	17.215	17.619	17.971	18.330	18.697	Continuing	Continuing
377A: *GDF-Medical Products and Capabilities Enhancement Activities*	94.558	15.140	16.819	17.215	-	17.215	17.619	17.971	18.330	18.697	Continuing	Continuing
457A: *AF Advanced Technology Development – Rapid Technology Transition*	1.336	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
700A: *CSI - Congressional Special Interests*	2.382	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force-Medical Products and Capabilities Enhancement Activities: Funds will support developmental upgrades to medical systems, training systems, and products that have been fielded, are routinely used in a fixed facility, or that have been approved for full-rate production and for which procurement funding is anticipated in the current fiscal year or subsequent fiscal years. These funds will support testing and evaluation for the enhancement of fielded or procured medical systems/products and medically-related information technology systems, assessment of fielded medical products or medical practices in order to identify the need/opportunity for changes, and analyses of clinical intervention outcomes to enhance and improve indications for pharmaceutical products. Efforts address the Military Health System Concept of Operations documents and follow-on Capabilities Based Assessments/Joint Capability Documents, appropriate Component requirements, legislative and Executive directives, and others as appropriate. Coordination occurs through the planning and execution activities of the Defense Health Agency Component Acquisition Executive (DHA CAE).

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	15.714	16.819	17.215	-	17.215
Current President's Budget	15.140	16.819	17.215	-	17.215
Total Adjustments	-0.574	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.574	-			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0607100DHA / *Medical Products and Capabilities Enhancement Activities*	**Project (Number/Name)** 377A / *GDF-Medical Products and Capabilities Enhancement Activities*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
377A: *GDF-Medical Products and Capabilities Enhancement Activities*	94.558	15.140	16.819	17.215	-	17.215	17.619	17.971	18.330	18.697	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Medical Products and Capabilities Enhancement Activity: This funding supports enhancement of existing medical products and medically related information technology systems to further fielding of joint medical materiel capabilities to meet Warfighter needs through support testing and evaluation for the enhancement of fielded or procured medical systems/products and medically-related information technology systems, assessment of fielded medical products or medical practices in order to identify the need/opportunity for changes, and analyses of clinical intervention outcomes to enhance and improve indications for pharmaceutical products.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 377A: GDF – Medical Products and Capabilities Enhancement Activities	15.140	16.819	17.215

Description: This funding provides support for developmental efforts to upgrade medical products and capabilities that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. These funds will support testing and evaluation for the enhancement of fielded or procured medical systems/products and medically-related information technology systems, assessment of fielded medical products or medical practices in order to identify the need/opportunity for changes, and analyses of clinical intervention outcomes to enhance and improve indications for pharmaceutical products.

FY 2020 Plans:

Funding will be used to modernize and upgrade products through joint testing and evaluation to improve fielding and procurement of medical materiel products. Programs for enhancement include: an assessment of a novel video laryngoscope for far-forward endotracheal intubation; evaluation of markerless-based motion capture technology as a screening tool for musculoskeletal injury; evaluation of a longer-acting sleep aid for military operations; expanding the use of a hemostatic device to control bleeding in wounded areas where a tourniquet cannot be utilized; and enhance a burn navigator application for care of burn patients in an operational setting.

FY 2021 Plans:

FY 2021 plans continue efforts as outlined in FY 2020.

FY 2020 to FY 2021 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0607100DHA / *Medical Products and Capabilities Enhancement Activities*	**Project (Number/Name)** 377A / *GDF-Medical Products and Capabilities Enhancement Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Pricing adjustment for inflation.			
Accomplishments/Planned Programs Subtotals	15.140	16.819	17.215

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This program will integrate product improvements and enhancements resulting from post marketing studies and surveillance in existing medical products and medically related information technology systems to better meet Warfighter needs.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0607100DHA / *Medical Products and Capabilities Enhancement Activities*	Project (Number/Name) 457A / *AF Advanced Technology Development – Rapid Technology Transition*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
457A: *AF Advanced Technology Development – Rapid Technology Transition*	1.336	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Air Force - Medical Products and Capabilities Enhancement Activities: Funds support a developmental upgrade to a medical product that has been fielded and for which procurement funding is anticipated subsequent fiscal years.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: AF Advanced Technology Development – Rapid Technology Transition	0.000	-	-
Description: Provide support for developmental efforts to upgrade medical products and capabilities that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.			
Accomplishments/Planned Programs Subtotals	0.000	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

$1.1M FY15/17 Defense Health Program – Air Force Procurement funds

D. Acquisition Strategy

Cost-plus Fixed Fee contract award to performer via the Army-Natick Soldier Systems Research Development and Execution Center contracting activity.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0607100DHA / *Medical Products and Capabilities Enhancement Activities*	Project (Number/Name) 700A / *CSI - Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
700A: *CSI - Congressional Special Interests*	2.382	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

No FY 2017 DHP Congressional Special Interest (CSI) funding is directed toward core research initiatives in Program Element (PE) 0607100 - Medical Products and Capabilities Enhancement Activities.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 0608045DHA *I Software and Digital Technology Pilot Program*

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	160.428	-	160.428	163.542	166.811	273.426	278.893	Continuing	Continuing
845: *Software & Digital Technology Pilot Program*	-	0.000	0.000	160.428	-	160.428	163.542	166.811	273.426	278.893	Continuing	Continuing

Note

This is not a new start. Effort continues from FY 2020, funded in PE 0605045DHA - Joint Operational Medicine Information System (JOMIS).

A. Mission Description and Budget Item Justification

Issue: The Defense Health Agency's Joint Operational Medicine Information System (JOMIS) (Budget Activities 01, 02 and 03) and Theater Medical Information Program - Joint (TMIP-J) (Budget Activity 01) will be realigned to the Software and Digital Technology Budget Activity (Budget Activity 08).

Joint Operational Medicine Information Systems (JOMIS) Program is to modernize, deploy, and sustain the DoD's operational medicine information systems using MHS GENESIS Electronic Health Record (EHR), while developing and fielding new theater capabilities that enable comprehensive health services to meet Warfighter requirements for military medical operations. JOMIS is intended to function in constrained, intermittent, and non-existent communications environments while providing access to authoritative sources of clinical data. The JOMIS Program is declared Joint Interest for capability requirements to be executed under the Joint Capabilities Integration and Development System (JCIDS) and the oversight of the Joint Requirements Oversight Council (JROC).

TMIP-J is a suite of system applications that is currently deployed to all Services as the primary healthcare information technology (IT) system supporting the Warfighter. TMIP-J integrates components of the Service's sustaining base systems and the medical information systems to ensure timely interoperable medical support for mobilization, deployment and sustainment of Theater and deployed forces. TMIP-J enhances the clinical care and information capture at all levels of care in Theater, transmits critical information to the Theater Commander, the evacuation chain for combat and non-combat casualties, and provides input to a service member's longitudinal health record. TMIP-J provides information at the point of injury and to the Theater tactical and strategic decision makers through data capture and transmission to a single Theater Management Data Store (TMDS). Using TMDS, TMIP-J provides the integration with external systems for medical logistics, patient movement and tracking, and medical command and control and medical situational awareness. TMIP-J system components integrate to specific tactical requirements, providing for availability in no- and low- communications environment through store and forward capture and transmission technology. The Theater Medical Information Program - Joint (TMIP-J) is in sustainment; Full Deployment declared May 2016.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Defense Health Agency	Date: February 2020
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 8: *Software and Digital Technology Pilot Programs*	**R-1 Program Element (Number/Name)** PE 0608045DHA *I Software and Digital Technology Pilot Program*

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	160.428	-	160.428
Total Adjustments	0.000	0.000	160.428	-	160.428
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Reprogrammings	-	-	160.428	-	160.428

Change Summary Explanation

The Software and Digital Technology Pilot Program (Budget Activity 08) is being stood up this cycle for the Defense Health Program by realigning the following funding streams to Budget Activity 08:

1) non-CIVPAY O&M funding (Budget Activity 01) for TMIP-J in the amount of $87.497M and for JOMIS in the amount of $21.051M.
2) RDT&E funding (Budget Activity 02) for JOMIS in the amount of $49.260M.
3) Procurement funding (Budget Activity 03) for JOMIS in the amount of $2.620M.

The establishment of the Software & Digital Technology PE/Project Code (Budget Activity 08) in the Research, Development, Test & Evaluation (RDT&E) appropriation allows software capability delivery to be funded as a single budget line item, with no separation between RDT&E, production and sustainment.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency			Date: February 2020
Appropriation/Budget Activity 0130 / 8	R-1 Program Element (Number/Name) PE 0608045DHA / *Software and Digital Technology Pilot Program*	Project (Number/Name) 845 / *Software & Digital Technology Pilot Program*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
845: *Software & Digital Technology Pilot Program*	-	0.000	0.000	160.428	-	160.428	163.542	166.811	273.426	278.893	Continuing	Continuing

A. Mission Description and Budget Item Justification

TMIP-J is a suite of system applications that is currently deployed to all Services as the primary healthcare information technology (IT) system supporting the Warfighter. TMIP-J integrates components of the Service's sustaining base systems and the medical information systems to ensure timely interoperable medical support for mobilization, deployment and sustainment of Theater and deployed forces. TMIP-J enhances the clinical care and information capture at all levels of care in Theater, transmits critical information to the Theater Commander, the evacuation chain for combat and non-combat casualties, and provides input to a service member's longitudinal health record. TMIP-J provides information at the point of injury and to the Theater tactical and strategic decision makers through data capture and transmission to a single Theater Management Data Store (TMDS). Using TMDS, TMIP-J provides the integration with external systems for medical logistics, patient movement and tracking, and medical command and control and medical situational awareness. TMIP-J system components integrate to specific tactical requirements, providing for availability in no- and low- communications environment through store and forward capture and transmission technology. The Theater Medical Information Program - Joint (TMIP-J) is in sustainment; Full Deployment declared May 2016.

The JOMIS Program will modernize, deploy, and sustain the DoD's operational medicine information systems using MHS GENESIS, while developing and fielding new theater capabilities that enable comprehensive health services to meet Warfighter requirements for military medical operations. JOMIS - MHS GENESIS is intended to function in constrained, intermittent, and non-existent communications environments while providing access to authoritative sources of clinical data. The JOMIS Program is declared Joint Interest for capability requirements to be executed under the Joint Capabilities Integration and Development System (JCIDS), with oversight by the Joint Staff J8 (Force Structure, Resources and Assessments) and the Joint Requirements Oversight Council (JROC).

The JOMIS Increment 1 Program is planned to deliver the MHS GENESIS Electronic Health Record (EHR) to meet the healthcare and dental documentation requirements validated by the JCIDS approved Theater Medical Information Requirements (TMIR) Capabilities Development Document (CDD) signed February 28, 2017. JOMIS Increment 1 is planned to deliver MHS GENESIS to replace/retire the legacy AHLTA-T and TC2 systems (under TMIP-J). The JOMIS Increment 1 Program is pre-Milestone B.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Software and Digital Technology Pilot Program	-	-	160.428
Description: Specific contribution to mission delivery: JOMIS Increment 1 Program will serve as the primary tactical system to meet the needs of the Warfighter by enabling the provision of coordinated healthcare services. MHS GENESIS is planned to provide for key capabilities in Healthcare Services & Documentation (including Blood Management and Dental Services and Documentation. The JOMIS Increment 1 Program will also integrate MHS GENESIS for interoperability with existing Theater			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 8	**R-1 Program Element (Number/Name)** PE 0608045DHA / *Software and Digital Technology Pilot Program*	**Project (Number/Name)** 845 / *Software & Digital Technology Pilot Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
system capabilities for Medical Logistics, Patient Movement and Evacuation, Medical Situational Awareness and Medical Command & Control. ***FY 2021 Plans:*** FY 2021 RDT&E Plans: $49.260 • Continue software development and other activities related to MHS-GENESIS Segment 2 Build 4 Gold Disk delivery. • Support the Defense Health Management System Modernization (DHMSM) program office for testing of MHS GENESIS Segment 2 Build 4 Gold Disk delivery. • Continue engineering and program management support for the Services. FY 2021 Procurement Plans: $2.620 • Continue integration activities, software licenses and utilities and tools. • Continue to support maintenance of government-approved laboratory infrastructure, software maintenance, hardware procurement and technical refreshes. FY 2021 O&M Plans: $108.548 • Prepare analyses and acquisition documentation in support of Test and Evaluation Authority to Proceed (ATP) Milestone Event • Continue decomposition into Requirements Definition Package (RDP) to inform JOMIS Increment 1 and the delivery of future increments capability • Continue support of Program Management Office (PMO) • Operate and maintain OM GAL Testing Facility • Continue engineering and program management support from the Air Force, Army, Marine Corps, and Navy • Fund sustainment of TMIP-J legacy systems prior to delivery of PM JOMIS ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Reflects the program's updated strategy and timeline. New funding in Budget Activity 08 starting in FY 2021 reflects the realignment of the funding for JOMIS/TMIP-J from Budget Activities 01, 02 and 03 to Budget Activity 08.			
Accomplishments/Planned Programs Subtotals	-	-	160.428

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Defense Health Agency		Date: February 2020
Appropriation/Budget Activity 0130 / 8	**R-1 Program Element (Number/Name)** PE 0608045DHA / *Software and Digital Technology Pilot Program*	**Project (Number/Name)** 845 / *Software & Digital Technology Pilot Program*

D. Acquisition Strategy

N/A

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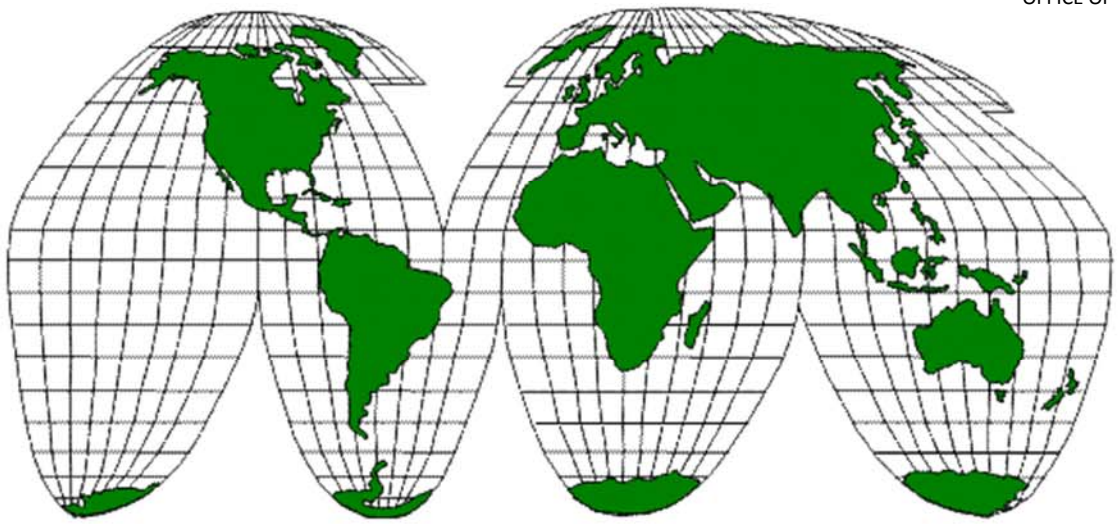
DEFENSE HEALTH PROGRAM



Fiscal Year (FY) 2021 Budget Estimates

OVERSEAS CONTINGENCY OPERATIONS (OCO)

February 2020

The Defense Health Program spans the globe in support of the Department of Defense's most important resource--active and retired military members and their families.

Preparation of the Defense-Wide budget excluding revolving funds, cost the Department of Defense a total of approximately $1,220,000 in FY 2020

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance Summary of Operations

Sub-Activity Group	Sub-Activity Group Name	FY 2019 Actuals	FY 2020 Enacted	FY 2021 Request
1	In House Care	69,929	57,459	65,072
2	Private Sector Care	277,066	287,487	296,828
3	Consolidated Health Support	2,426	2,800	3,198
4	Information Management			
5	Management Activities			
6	Education and Training			
7	Base Operations/Communications			
		349,421	347,746	365,098

The Defense Health Program's FY 2021 request is comprised of funding for:

OCO for Direct War Costs ($365,098K): Direct War costs are those combat or direct combat support costs that will continue to be expended once combat operations end at major contingency locations.

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance by Subactivity Group

Budget Activity 1, Operation and Maintenance

I. Description of Operations Supported: Provides resources needed to fund the incremental (above baseline) costs to support Operation FREEDOM'S SENTINEL (OFS) in Afghanistan, Operation INHERENT RESOLVE (OIR) in Iraq and the Levant, increasing efforts to support European allies and deter aggression (European Reassurance Initiative), and supporting a partnership-focused approach to counterterrorism. The resource amounts provided are consistent with the Department's force level budgetary assumptions. These incremental funds provide medical and dental services to active forces, mobilized Reserve Components (RC), and their family members in support of these operations. The Defense Health Program (DHP) baseline budget request does not fund the medical and dental support requirements within the Area of Responsibility (AOR). Other DHP operational requirements in support of these operations include: Pre/Post deployment processing for personnel, aeromedical transportation of casualties from Germany to the U.S., and contracted civilian medical personnel to backfill deployed permanent Military Treatment Facility (MTF) staff.
The Defense Health Program's FY 2021 Overseas Contingency Operations funding supports the following category:
OCO for Direct War Costs ($365,098K): Direct War costs are those combat or direct combat support costs that will not continue to be expended once combat operations end at major contingency locations.

- **In House Care:**
  - Incremental costs for casualties above the baseline budget
  - Backfill of deployed permanent medical personnel

- **Private Sector Care**
  - Incremental costs to provide medical/dental care for mobilized RC and their family members

- **Consolidated Health Support**
  - Incremental costs for aeromedical transportation of wounded warriors from outside the theater of operations to the United States
  - Backfill of medical staff in the Public Health and Bioenvironmental Engineering duty sections to continue MTF and base support functions.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance by Subactivity Group

II. Financial Summary:

($ in Thousands)

Total DHP OCO:	FY 2019 Actuals	FY 2020 Enacted	FY 2021 Request
	349,421	347,746	365,098

	FY 2019	FY 2020	FY 2021
OCO for Direct War Costs:			365,098

A. Subactivity Group – In-House Care:

($ in Thousands)

FY 2019 Estimate	FY 2020 Enacted	FY 2021 Request
69,929	57,459	65,072

Narrative Justification: Funding in this budget activity group directly supports pre/post deployment activities such as medical records reviews, hearing and vision exams, medical evaluations, immunizations and behavioral health screening for all deploying and returning soldiers. Funding also supports backfill of deployed personnel with medical staff to sustain the delivery of patient care in Military Treatment Facilities (MTFs). Increase from FY 2020 to FY 2021 is based on increase in forecasted deployments.

Impact if not funded: The Military Treatment Facilities' (MTFs') primary mission is to provide healthcare to uniformed service personnel. Funding is required to provide medical and dental care

for the mobilized forces not funded in the baseline budget. Without this funding, MTFs would have to reduce access to care for non-active duty beneficiaries (retirees and family members) resulting in disengagement of these beneficiaries to the private sector for healthcare services. If funding is not provided to backfill the healthcare positions vacated in the MTFs by deployed medical personnel, components will have to redirect funding from other direct care system requirements to sustain the continuity of healthcare to patients.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance by Subactivity Group

A. Subactivity Group – Private Sector Care:

FY 2019	FY 2020	FY 2021
Estimate	**Enacted**	**Request**
277,066	287,487	296,828

Narrative Justification: Funding provides Reserve Component (RC) personnel and their family members with healthcare, pharmacy and dental benefits. Mobilized RC personnel and their family members are eligible for medical and dental similar to active duty personnel, including access to private sector care providers through the TRICARE Managed Care Support Contract (MCSC) provider networks. This access to MCSC provider networks also supports those beneficiaries living in remote locations outside the established network areas. TRICARE Reserve Select program, offered to RC members who enroll and share premiums with the government, is not included in this requirement.

Impact if not funded: Providing healthcare to mobilized Reserve Component personnel and their families is congressionally mandated. This is a must-pay bill and the cost will be incurred regardless of the availability of funding. If funding is not provided, lower priority healthcare requirements will be delayed so that funding can be shifted to pay for the healthcare services.

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance by Subactivity Group

A. Subactivity Group - Consolidated
Health Support:

FY 2019	FY 2020	FY 2021
Estimate	**Enacted**	**Request**
2,426	2,800	3,198

Narrative Justification: Requirements in this budget activity group directly support the transportation of wounded warriors by aircraft from outside the theater of operations to the United States, the resupply of medical evacuation equipment, and ground transportation for patients outside of the theater. Projections for deployed active and reserve component forces in FY 2021 contribute to an increase in the overall requirement.

Impact if not funded: Aeromedical transport missions would require additional internal funding offsets such as delays in infrastructure improvements and equipment or supply procurement.

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Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance
Summary of Price and Program Growth

Line	(Dollars in Thousands)	FY 2019 Actuals	CHANGE Price Growth	CHANGE Program Growth	FY 2020 Enacted	CHANGE Price Growth	CHANGE Program Growth	FY 2021 Request
101	Exec, Gen'l & Spec Scheds	830	16	(846)	-	-	-	-
199	**Total Civ Compensation**	**830**	**16**	**(846)**	**-**	**-**	**-**	**-**
308.1	Travel of Persons	962	19	(881)	100	2	788	890
399	**Total Travel**	**962**	**19**	**(881)**	**100**	**2**	**788**	**890**
411	Army Supply	-	-	-	-	-	450	450
417	Local Purch Supplies & Mat	-	-	-	-	-	46	46
499	**Total Supplies & Materials**	**-**	**-**	**-**	**-**	**-**	**496**	**496**
502	Army Fund Equipment	-	-	-	-	-	658	658
599	**Total Equipment Purchases**	**-**	**-**	**-**	**-**	**-**	**658**	**658**
601	Army Industrial Operations	-	-	-	-	-	153	153
682	Industrial Mob Capacity	-	-	-	-	-	250	250
699	**Total DWCF Purchases**	**-**	**-**	**-**	**-**	**-**	**403**	**403**
706	AMC Channel Passenger	1,439	29	332	1,800	36	34	1,870
771	Commercial Transportation	4	0	(4)	-	-	-	-
799	**Total Transportation**	**1,443**	**29**	**328**	**1,800**	**36**	**34**	**1,870**
914	Purchased Communications (Non-Fund)	522	10	(532)	-	-	-	-
915	Rents (Non-GSA)	3	0	(3)	-	-	-	-
920.1	Supplies & Materials (Non-Fund)	5,468	109	(5,477)	100	2	(102)	-
924	Pharmaceutical Drugs	39,179	1,528	(5,326)	35,381	1,380	4,230	40,991
925	Equipment Purchases (Non-Fund)	1,195	24	(1,219)	-	-	-	-

Defense Health Program
Fiscal Year (FY) 2021 President's Budget
Overseas Contingency Operations (OCO)
Operation and Maintenance
Summary of Price and Program Growth

955	Other Costs (Medical Care)	19,720	769	(20,489)	-	-	284	284