Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603002A *I Medical Advanced Technology*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	95.146	137.804	5.207	-	5.207	4.129	3.088	2.029	2.028	0.000	249.431
814: *NEUROFIBROMATOSIS (CA)*	-	20.000	-	-	-	-	-	-	-	-	0.000	20.000
945: *BREAST CANCER STAMP PROCEEDS*	-	0.477	-	-	-	-	-	-	-	-	0.000	0.477
97T: *NEUROTOXIN EXPOSURE TREATMENT (CA)*	-	16.000	-	-	-	-	-	-	-	-	0.000	16.000
CJ3: *Prophylactic for Endemic Diarrheal Diseases*	-	-	4.009	-	-	-	-	-	-	-	0.000	4.009
MM2: *MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)*	-	21.000	94.000	-	-	-	-	-	-	-	0.000	115.000
MM7: *Enabling Med Cap to Support Dispersed OPS Adv Tech*	-	2.913	3.232	0.749	-	0.749	0.852	1.030	1.030	1.030	0.000	10.836
MN3: *Immediate Cardiopulmonary Stabilization Adv Tech*	-	2.071	1.727	-	-	-	-	-	-	-	0.000	3.798
MN4: *Advanced Life Support Advanced Technology*	-	3.615	3.927	-	-	-	-	-	-	-	0.000	7.542
MN5: *Next Generation Blood Products Advanced Technology*	-	6.610	9.394	-	-	-	-	-	-	-	0.000	16.004
MN6: *Blast & Head Impact Exposure Monitor Advanced Tech*	-	1.878	1.546	1.168	-	1.168	-	-	-	-	0.000	4.592
MN7: *Musculoskeletal Injury Screening Tool Adv Tech*	-	3.274	1.664	1.276	-	1.276	0.759	0.822	0.481	0.481	0.000	8.757
MN9: *Far Forward Behavioral Health Care Advanced Tech*	-	1.080	0.283	-	-	-	-	-	-	-	0.000	1.363

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603002A *I Medical Advanced Technology*							
MO2: *Traumatic Brain Injury (TBI) Treatment Adv Tech*	-	4.649	10.667	-	-	-	-	-	-	-	0.000	15.316
MO4: *Burn Recovery Optimization Advanced Technology*	-	3.326	2.059	-	-	-	-	-	-	-	0.000	5.385
MO7: *Improved Bone Repair Advanced Technology*	-	1.564	1.069	-	-	-	-	-	-	-	0.000	2.633
MO8: *Expeditionary Performance Nutrition Advanced Techn*	-	2.062	1.936	0.175	-	0.175	0.728	0.163	0.163	0.163	0.000	5.390
MO9: *Vaccines to Prevent Dengue Fever Advanced Tech*	-	2.037	-	-	-	-	-	-	-	-	0.000	2.037
MP3: *Phys Chem Toxicity Assessment Sys Adv Tech*	-	2.590	2.291	1.839	-	1.839	1.790	1.073	0.355	0.354	0.000	10.292

A. Mission Description and Budget Item Justification

This Program Element (PE) matures and demonstrates advanced medical technologies including drugs, vaccines, medical diagnostic devices, measures for identification and vector control, and developing medical practices and procedures to effectively protect and improve the survivability of United States Forces across the entire spectrum of military operations. Tri-Service coordination and cooperative efforts are focused in four principal medical areas: Combat Casualty Care, Military Operational Medicine, Militarily Relevant Infectious Diseases, and Clinical and Rehabilitative Medicine. Starting in Fiscal Year 2020 (FY20), the principal area of Clinical and Rehabilitative Medicine is replaced with the area of Medical Assist Support Technologies.

Promising medical technologies are refined and validated through extensive testing, which is conducted in compliance with Food and Drug Administration (FDA) regulations for human medical products, and environmental protection agency (EPA) regulations for insect-control products that impact humans or the environment (e.g., repellents and insecticides). The FDA requires medical products to undergo extensive preclinical testing in animals and/or other models to obtain preliminary effectiveness and safety information before they can be tested in human clinical trials. Clinical trials are conducted stepwise: first to prove the product is safe in humans, second to demonstrate the desired effectiveness and optimal dosage (amount to be administered) in a small group human study, and third to demonstrate effectiveness in large, diverse human populations. Each successive phase includes larger numbers of human subjects and requires FDA cognizance prior to proceeding. Work conducted in this PE primarily focuses on late stages of technology maturation activities required to conduct safety and effectiveness clinical trials. Some high-risk technologies may require additional maturation with FDA guidance prior to initiating these clinical trials. Such things as proof of product stability and purity are necessary to meet FDA standards before entering later stages of testing and prior to transitioning into a formal acquisition program where large pivotal trials in diverse populations will be conducted for licensure. Activities in this PE may include completion of preclinical animal studies and small safety and effectiveness studies involving humans according to FDA and EPA requirements. Promising medical technologies that are not regulated by the FDA or EPA are modeled, prototyped, and tested in relevant environments.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603002A *I Medical Advanced Technology*

Blast research and research into maturing field rations in this PE are fully coordinated with the United States Army Combat Capabilities Development Command Soldier Center. This coordination enables improved body armor design and rations for Soldiers. Additionally, the activities funded in this PE are externally peer reviewed and fully coordinated with all Services as well as other agencies through the Joint Technology Coordinating Groups of the Armed Services Biomedical Research Evaluation and Management (ASBREM) Community of Interest (COI). The ASBREM COI, formed under the authority of the Assistant Secretary of Defense for Research and Engineering, serves to facilitate coordination and prevent unnecessary duplication of effort within the Department of Defense's biomedical research and development community, as well as its associated enabling research areas.

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) Science and Technology (S&T) focus areas and the Army Modernization Strategy.

Work in this PE is performed by: the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	94.669	43.804	0.000	-	0.000
Current President's Budget	95.146	137.804	5.207	-	5.207
Total Adjustments	0.477	94.000	5.207	-	5.207
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	94.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.477	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	5.207	-	5.207

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 814: *NEUROFIBROMATOSIS (CA)*		
Congressional Add: *Peer-reviewed Neurofibromatosis Research*	20.000	-
Congressional Add Subtotals for Project: 814	20.000	-
Project: 97T: *NEUROTOXIN EXPOSURE TREATMENT (CA)*		
Congressional Add: *Peer-reviewed Neurotoxin Exposure Treatment Parkinson's Research*	16.000	-
Congressional Add Subtotals for Project: 97T	16.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603002A *I Medical Advanced Technology*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: MM2: *MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)*		
Congressional Add: *Program Increase: Burn Care Training Curriculum*	5.000	5.000
Congressional Add: *Program Increase - Peer-Reviewed Military Burn Research*	10.000	10.000
Congressional Add: *Program Increase: Advanced Hemostat Products*	6.000	-
Congressional Add: *Aerial Reconfigurable Embedded System*	-	5.000
Congressional Add: *Dengue Vaccine Development*	-	6.000
Congressional Add: *Hearing Protection for Communications*	-	5.000
Congressional Add: *Heat Stress on Female Service Members*	-	2.000
Congressional Add: *Optimizing Military Health and Performance*	-	7.000
Congressional Add: *Peer-Reviewed Neurofibromatosis Research*	-	20.000
Congressional Add: *Peer-Reviewed Parkinson's Research*	-	16.000
Congressional Add: *Rapid Vaccine Development*	-	10.000
Congressional Add: *Suicide Prevention with Focus on Rural, Remote, Isolated, and OCONUS Installations*	-	3.000
Congressional Add: *Trauma Immunology Research*	-	5.000
Congressional Add Subtotals for Project: MM2	21.000	94.000
Congressional Add Totals for all Projects	57.000	94.000

Change Summary Explanation

Fiscal Year 2023 (FY23) funding increase reflects the fact that the FY22 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) 814 / *NEUROFIBROMATOSIS (CA)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
814: *NEUROFIBROMATOSIS (CA)*	-	20.000	-	-	-	-	-	-	-	-	0.000	20.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Congressional increase for Neurofibromatosis Research Program.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Neurofibromatosis research.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Peer-reviewed Neurofibromatosis Research	20.000	-
FY 2021 Accomplishments: Program Increase supported advanced research on Neurofibromatosis. Work executed by Army Futures Command.		
Congressional Adds Subtotals	20.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) 945 / *BREAST CANCER STAMP PROCEEDS*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
945: *BREAST CANCER STAMP PROCEEDS*	-	0.477	-	-	-	-	-	-	-	-	0.000	0.477
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This Project receives funds as proceeds from the sale of Breast Cancer Stamps.

A. Mission Description and Budget Item Justification

This Project receives funds as proceeds from the sale of Breast Cancer Stamps.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Breast Cancer Stamp Proceeds	0.477	-	-
Description: This Project receives funds as proceeds from the sale of Breast Cancer Stamps.			
Accomplishments/Planned Programs Subtotals	0.477	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) 97T / *NEUROTOXIN EXPOSURE TREATMENT (CA)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
97T: *NEUROTOXIN EXPOSURE TREATMENT (CA)*	-	16.000	-	-	-	-	-	-	-	-	0.000	16.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Congressional increase for Peer-Reviewed Neurotoxin Exposure Treatment Parkinson's Research Program.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Neurotoxin Exposure Treatment.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Peer-reviewed Neurotoxin Exposure Treatment Parkinson's Research	16.000	-
FY 2021 Accomplishments: Program Increase supported advanced research on Neurotoxin Exposure Treatment Parkinson's Research. Work executed by Army Futures Command.		
Congressional Adds Subtotals	16.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) CJ3 / *Prophylactic for Endemic Diarrheal Diseases*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CJ3: *Prophylactic for Endemic Diarrheal Diseases*	-	-	4.009	-	-	-	-	-	-	-	0.000	4.009
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year 2023 (FY23), funding and mission in this project are realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.

A. Mission Description and Budget Item Justification

Demonstrate bacterial diarrheal prophylactic candidate safety, effectiveness, and pharmacokinetics through clinical trials in humans. Transition the prophylactic candidate to product developer in support of future FDA licensure.

Research is conducted in compliance with the United States Food and Drug Administration (FDA) regulations for medical products for human use.

Research is managed by the United States Army Medical Research and Development Command (USAMRDC) in coordination with the Naval Medical Research Center (NMRC). The Army is responsible for programming and funding all Department of Defense (DoD) naturally occurring infectious disease research requirements, thereby precluding duplication of effort within the Military Departments.

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the USAMRDC, Fort Detrick, MD.

Efforts in this Project support the Soldier portfolio and the principal area of Military Relevant Infectious Diseases.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Prophylactic for Endemic Diarrheal Diseases	-	3.863	-
Description: Demonstrate bacterial diarrheal prophylactic candidate safety, effectiveness, and pharmacokinetics through clinical trials in humans in support of future FDA licensure.			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** CJ3 / *Prophylactic for Endemic Diarrheal Diseases*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Will mature oral prophylactic candidates for the prevention of bacterial diarrheal diseases; validate commercial off the shelf (COTS) products for prevention of bacterial diarrheal diseases; provide data packages for the FDA to test suitable candidates in humans for safety and effectiveness; demonstrate the candidates in human clinical trials for safety and effectiveness against bacterial diarrheal diseases. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.146	-
Accomplishments/Planned Programs Subtotals	-	4.009	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*				Project (Number/Name) MM2 / *MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
MM2: *MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)*	-	21.000	94.000	-	-	-	-	-	-	-	0.000	115.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Congressional increase for Peer-reviewed military burn research.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Medical Advanced Technology Initiatives.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Program Increase: Burn Care Training Curriculum ***FY 2021 Accomplishments:*** Program Increase supported advanced research on Burn Care Training Curriculum. Work executed by Army Futures Command. ***FY 2022 Plans:*** Congressional Interest Item funding provided for Burn Care Training Curriculum	5.000	5.000
Congressional Add: Program Increase - Peer-Reviewed Military Burn Research ***FY 2021 Accomplishments:*** Program Increase supported advanced research on Peer-reviewed Military Burn Research. Work executed by Army Futures Command. ***FY 2022 Plans:*** Congressional Interest Item funding provided for Peer-Reviewed Military Burn Research	10.000	10.000
Congressional Add: Program Increase: Advanced Hemostat Products ***FY 2021 Accomplishments:*** Program Increase supported advanced research on Advanced Hemostat Products.	6.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MM2 / *MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Work executed by Army Futures Command.		
Congressional Add: Aerial Reconfigurable Embedded System	-	5.000
FY 2022 Plans: Congressional Interest Item funding provided for Aerial Reconfigurable Embedded System		
Congressional Add: Dengue Vaccine Development	-	6.000
FY 2022 Plans: Congressional Interest Item funding provided for Dengue Vaccine Development		
Congressional Add: Hearing Protection for Communications	-	5.000
FY 2022 Plans: Congressional Interest Item funding provided for Hearing Protection for Communications		
Congressional Add: Heat Stress on Female Service Members	-	2.000
FY 2022 Plans: Congressional Interest Item funding provided for Heat Stress on Female Service Members		
Congressional Add: Optimizing Military Health and Performance	-	7.000
FY 2022 Plans: Congressional Interest Item funding provided for Optimizing Military Health and Performance		
Congressional Add: Peer-Reviewed Neurofibromatosis Research	-	20.000
FY 2022 Plans: Congressional Interest Item funding provided for Peer-Reviewed Neurofibromatosis Research		
Congressional Add: Peer-Reviewed Parkinson's Research	-	16.000
FY 2022 Plans: Congressional Interest Item funding provided for Peer-Reviewed Parkinson's Research		
Congressional Add: Rapid Vaccine Development	-	10.000
FY 2022 Plans: Congressional Interest Item funding provided for Rapid Vaccine Development		
Congressional Add: Suicide Prevention with Focus on Rural, Remote, Isolated, and OCONUS Installations	-	3.000
FY 2022 Plans: Congressional Interest Item funding provided for Suicide Prevention with Focus on Rural, Remote, Isolated, and OCONUS Installations		
Congressional Add: Trauma Immunology Research	-	5.000
FY 2022 Plans: Congressional Interest Item funding provided for Trauma Immunology Research		
Congressional Adds Subtotals	21.000	94.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MM2 / *MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MM7 / *Enabling Med Cap to Support Dispersed OPS Adv Tech*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MM7: *Enabling Med Cap to Support Dispersed OPS Adv Tech*	-	2.913	3.232	0.749	-	0.749	0.852	1.030	1.030	1.030	0.000	10.836
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Matures and demonstrates a tele-monitored and remote-controlled Combat Evacuation Mission Module to support medical resupply and casualty evacuation using future multi-purpose Vertical Take-Off and Landing (VTOL) unmanned aircraft systems (UAS). Provides a self-contained medical module capability adaptable to various future multi- purpose VTOL UAS. Matures and demonstrates an intelligent decision-support capability that can be operated on an Army or Navy provided End User Device (EUD), such as the NETT Warrior system, to assist medics with patient assessment, triage, treatment, and disposition in a Prolonged Field Care (PFC) environment by assessing patient conditions to provide adaptive care guidelines.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Medical Robotic and Autonomous Systems	2.913	-	-
Description: This Task now incorporates the previous Combat Evacuation Mission Module Task. Research, design and develop a tele-monitored and remote-controlled Combat Evacuation Mission Module to support medical resupply and casualty evacuation using future multi-purpose VTOL UAS. Provides a self-contained medical module capability adaptable to various future multi-purpose VTOL UAS. Research, design, and prototype an intelligent decision-support capability that can be operated on an Army or Navy provided End User Device (EUD), such as the NETT Warrior system, to assist medics with patient assessment, triage, treatment, and disposition in a PFC environment by assessing patient conditions to provide adaptive care guidelines.			
Title: Develop Prototype Medical Robotic and Autonomous System (Med-RAS)	-	3.120	0.749
Description: Matures and demonstrates a tele-monitored and remote-controlled Combat Evacuation Mission Module to support medical resupply and casualty evacuation using future multi-purpose VTOL UAS. Provides a self-contained medical module capability adaptable to various future multi- purpose VTOL UAS. Matures and demonstrates an intelligent decision-support capability that can be operated on an Army or Navy provided EUD, such as the NETT Warrior system, to assist medics with patient assessment, triage, treatment, and disposition in a PFC environment by assessing patient conditions to provide adaptive care guidelines. ***FY 2022 Plans:*** Will mature a self-contained Semi-Autonomous Casualty Management Module (SACM2) for integration of medical capability components to move from human to semi-autonomous, and fully automate interfaces for both tele-operated and closed-loop			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MM7 / *Enabling Med Cap to Support Dispersed OPS Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
controlled remote patient monitoring and management systems and in-flight interventions; provide communication infrastructure and cyber security solutions for remote patient monitoring, remote supervision and control of semi-autonomous patient management systems, and Virtual Health support for attending medics; demonstrate a Safe Transport and Evacuation Protocol System (STEPS) to implement the flight control constraints necessary to ensure patient safety and protect sensitive medical materiel during flight onboard unmanned or ?optionally-piloted? vehicles; optimize a Multi-Mission Vehicle Interface which includes an innovative patient handling system and a common vehicle interface (physical, electrical, and data links), providing a means to rapidly reconfigure future vehicle platforms for MEDEVAC or CASEVAC missions; mature a hardware system to enable video and audio data collection for integrating Computer Vision and Natural Language Processing technologies to automate documentation of patient encounter and medic interventions. ***FY 2023 Plans:*** Mature the combat evacuation mission module (CEMM) and conceptual designs and physical prototypes of the Multi-Mission Vehicle Interface (MMVI); demonstration the MMVI prototype with the Future Vertical Lift prototype or technology demonstrator vehicle or an ?optionally-manned? aircraft and /or Squad Multi-purpose Equipment Transport unmanned ground vehicle. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decreased due to realignment of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0602115DHA, Project Code 372G.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.112	-
Accomplishments/Planned Programs Subtotals	2.913	3.232	0.749

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army										Date: April 2022		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*				Project (Number/Name) MN3 / *Immediate Cardiopulmonary Stabilization Adv Tech*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
MN3: *Immediate Cardiopulmonary Stabilization Adv Tech*	-	2.071	1.727	-	-	-	-	-	-	-	0.000	3.798
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year 2023 (FY23), this Project is Eliminated.

A. Mission Description and Budget Item Justification

This Project covers development, pre-clinical and early-clinical demonstration, and transition of technologies for immediate pre-hospital hemorrhage detection and control and airway management. These technologies facilitate autonomous intubation and airway management in combat casualties with obstructed airways. This Project also demonstrates advanced technologies for use in forward areas to detect and control non-compressible internal bleeding, and demonstration of pain-relieving drugs that are safe for use during bleeding.

Promising efforts identified through Applied Research conducted under Program Element (PE) 0602787A (Medical Technology) / Project MM4 (Cbt Casualty Care Applied Rsch Technology) are further matured under this Project. Promising results identified under this Project are further matured under PE 0603807A (Medical Systems Advanced Development) / Project 836 (Field Medical Systems Advanced Development).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Immediate Cardiopulmonary Stabilization Advanced Technology ***Description:*** Development, preclinical and early-clinical demonstration, and transition of technologies that facilitate autonomous intubation and airway management in combat casualties with obstructed airways, as well as advanced hemostatic bandage candidates that augment the patient's blood clotting system and new tourniquet technologies suitable for prolonged use.	2.071	-	-
Title: Tactical Combat Casualty Care Pharmaceuticals and Devices Cap Set 1 ***Description:*** Development, late-phase animal studies and early-clinical demonstration, and transition of technologies that facilitate autonomous intubation and airway management in combat casualties with obstructed airways, as well as advanced	-	1.702	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MN3 / *Immediate Cardiopulmonary Stabilization Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
hemostatic (arrest of bleeding) bandage candidates that correct the patient's blood clotting system and new tourniquet technologies suitable for prolonged use. ***FY 2022 Plans:*** Demonstrate most promising bleeding control intervention candidates for limb and junctional bleeding (bleeding from a junction of the torso to the extremities, i.e., the base of the neck, shoulder, axilla, perineum, buttocks, gluteal area and the groin) through mechanical testing, and provide best practices for bleeding control; engineer battlefield-relevant manikin and employ large animal injury models for demonstration of airway management technologies and devices. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.025	-
Accomplishments/Planned Programs Subtotals	2.071	1.727	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MN4 / *Advanced Life Support Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MN4: *Advanced Life Support Advanced Technology*	-	3.615	3.927	-	-	-	-	-	-	-	0.000	7.542
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year 2023 (FY23), this Project is Eliminated.

A. Mission Description and Budget Item Justification

This Project covers development, demonstration, and transition of technologies that enable advanced life support under prolonged care scenarios, including life-support devices that provide lung and kidney functions in casualties with severe injuries and devices and clinical guidelines for the prevention of irreversible organ damage resulting from prolonged lack of blood circulation.

All research is conducted in compliance with Food and Drug Administration (FDA) requirements for licensure of medical products for human use.

Promising efforts identified through Applied Research conducted under Program Element (PE) 0602787A (Medical Technology) / Project MM4 (Cbt Casualty Care Applied Rsch Technology) are further matured under this Project. Promising results identified under this Project are further matured under PE 0603807A (Medical Systems Advanced Development) / Project 836 (Field Medical Systems Advanced Development).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Battlefield Sustainment of Critical Organ Function Capability Set 1	3.615	3.797	-
Description: Develop, demonstrate and transition technologies that enable advanced life support under prolonged field care scenarios: life-support devices that provide lung and kidney functions in casualties with severe injuries, and devices and clinical guidelines for the prevention of irreversible organ damage resulting from prolonged lack of blood circulation.			
FY 2022 Plans: Will perform preclinical validation studies of down selected Nitric oxide-release/Non-adhesive coating in extracorporeal life support (ECLS) circuit vs. immobilized heparin standard of care in advanced injury models; mature and demonstrate a single device and pump driven modular platform for lung and renal support that will carry out ECLS without systemic anticoagulation;			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MN4 / *Advanced Life Support Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
demonstrate portable ECLS platform designed to improve blood oxygenation through first in human study to inform the US critical care community about the safety, feasibility and efficacy of this system in reducing mechanical ventilator settings, and avoiding use of mechanical ventilation in the critically ill. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.130	-
Accomplishments/Planned Programs Subtotals	3.615	3.927	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MN5 / *Next Generation Blood Products Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MN5: *Next Generation Blood Products Advanced Technology*	-	6.610	9.394	-	-	-	-	-	-	-	0.000	16.004
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year 2023 (FY23), this Project is Eliminated.

A. Mission Description and Budget Item Justification

This Project covers technology development, pre-clinical and early-clinical demonstration, and transition of new blood products with increased shelf life and functionality. Cold-stored platelets, fibrinogen replacement technologies, and pharmaceuticals that protect and metabolically stabilize blood-deprived tissues and reverse impaired blood clotting subsequent to severe injury, will improve prompt hemorrhage control, mitigate effects of shock, and minimize sustainment requirements.

All research is conducted in compliance with Food and Drug Administration (FDA) requirements for licensure of medical products for human use.

Promising efforts identified through Applied Research conducted under Program Element (PE) 0602787A (Medical Technology) / Project MM4 (Cbt Casualty Care Applied Rsch Technology) are further matured under this Project. Promising results identified under this Project are further matured under PE 0603807A (Medical Systems Advanced Development) / Project 836 (Field Medical Systems Advanced Development).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Next Generation Human-Derived Blood Replacement	6.610	9.275	-
Description: Develop, demonstrate in pre-clinical and early-clinical studies, and transition new blood products with increased shelf life and functionality including cold-stored platelets and biopharmaceutical technologies that stop life threatening bleeding, stabilize tissue metabolism, mitigate shock and restore normal blood clotting will improve prompt hemorrhage control and minimize sustainment requirements.			
FY 2022 Plans: Will perform preclinical studies and early clinical evaluations aimed at extending availability of whole blood, platelets, and plasma to all areas of the battlefield; comparatively demonstrate ability of promising cold-stored platelet additives to extend shelf life and			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MN5 / *Next Generation Blood Products Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
maintain normal platelet function; validate engineered plasma in a small animal polytrauma model for ability to reverse acute traumatic coagulopathy (a condition in which the blood's ability to form clots is impaired), prolong survival, and improve outcomes; validate currently available portable blood storage and transport containers under a variety of environmental conditions for impact on blood function. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.119	-
Accomplishments/Planned Programs Subtotals	6.610	9.394	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MN6 / *Blast & Head Impact Exposure Monitor Advanced Tech*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MN6: *Blast & Head Impact Exposure Monitor Advanced Tech*	-	1.878	1.546	1.168	-	1.168	-	-	-	-	0.000	4.592
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project will inform the development of technologies and strategies to detect and provide actionable information to unit leader/Soldier about hazardous exposure to blast and head impact. This capability will help prevent degradation to Soldier cognitive readiness and performance and enhance combat power.

The cited research is fully coordinated with Program Element (PE) 0602143A (Soldier Lethality Technology) and complimentary to PE 0603118A (Soldier Lethality Advanced Technology) and is fully coordinated with other Services in order to avoid duplication of effort.

The cited work is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Injury Criteria for Informing the Development of New Tactical Head borne Systems.	1.878	1.490	1.168
Description: This effort validates injury risk assessment/guidance/criteria that will inform the development of technologies (i.e., personal protection equipment, vehicles) and strategies (i.e., health hazard assessments) to protect the Soldier against current and emerging operational threats (i.e., blast, blunt, ballistic, and accelerative). ***FY 2022 Plans:*** Finalize the validation and deliver Go/No Go Readiness predictive algorithm that will alert and inform unit leader/Soldier of cognitive status after a potential injurious head impact and blast exposure has occurred. Finalize the validation and deliver head supported mass criteria in dismounted Soldier environments. ***FY 2023 Plans:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in National Defense Authorization Act 2019 (Sections 711,737). Funding transferred to Program Element 0603115DHA, Project Code 373H. ***FY 2022 to FY 2023 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MN6 / *Blast & Head Impact Exposure Monitor Advanced Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding decreased due to realignment of US Army Medical Research and Development Command to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.056	-
Accomplishments/Planned Programs Subtotals	1.878	1.546	1.168

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MN7 / *Musculoskeletal Injury Screening Tool Adv Tech*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MN7: *Musculoskeletal Injury Screening Tool Adv Tech*	-	3.274	1.664	1.276	-	1.276	0.759	0.822	0.481	0.481	0.000	8.757
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project develops strategies and technologies to reduce musculoskeletal injury (MSKI) rates and improve outcomes following Return to Duty (RTD) in the Army training, operational, and medical communities to improve Soldier readiness.

The cited research is fully coordinated with Program Element (PE) 0602143A (Soldier Lethality Technology) and complimentary to PE 0603118A (Soldier Lethality Advanced Technology), and is fully coordinated with the Army Training and Doctrine Command (TRADOC) and other Services in order to avoid duplication of effort.

The cited work is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Leader and Medical Provider Tools to Prevent and Reduce Musculoskeletal Injury in All Settings	3.274	1.029	1.276
Description: Project validates in field environment strategies and technologies to reduce MSKI rates and improve outcomes following RTD in the Army training, operational, and medical communities to improve Soldier readiness. ***FY 2022 Plans:*** Will provide follow-up data, data processing, and dissemination of Nonsteroidal Anti-inflammatory Drugs (NSAIDs) data to the U.S. Army Training and Doctrine Command/Center for Initial Military Training (TRADOC/CIMT); provide the most important modifiable risk factors from validated field musculoskeletal injury data and begin transition of an injury risk capability to TRADOC/CIMT. ***FY 2023 Plans:*** Will validate and transition musculoskeletal injury risk guidelines to TRADOC-CIMT, complementary applied research efforts will be performed in Program Element 0602787A, Project MK4 (Leader Tools to Reduce Musculoskeletal Injury in All Settings). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding change reflects planned lifecycle of this effort.			
Title: Forward Neuro-Muscular Skeletal Injury Assessment to Reduce Unnecessary Evacuations	-	0.575	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MN7 / *Musculoskeletal Injury Screening Tool Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: This program will validate solutions to accurately assess the severity of acute, non-penetrating soft-tissue injuries in training and operational environments. This capability once transitioned will show proof of concept of a capability that will improve Soldier readiness and return to duty and limit unnecessary evacuations by accurately diagnosing and assessing musculoskeletal injury. ***FY 2022 Plans:*** Will validate field expedient bone imaging technologies; validate use of existing handheld ultrasound technologies with limited use providers for use in the field; validate use of real-time handheld ultrasound to assess soft tissue injury in the field by providers with limited training. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.060	-
Accomplishments/Planned Programs Subtotals	3.274	1.664	1.276

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army										Date: April 2022		
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*				Project (Number/Name) MN9 / *Far Forward Behavioral Health Care Advanced Tech*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
MN9: *Far Forward Behavioral Health Care Advanced Tech*	-	1.080	0.283	-	-	-	-	-	-	-	0.000	1.363
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Starting in Fiscal Year 2023 (FY23), this Project is Eliminated and funds have been realigned to Program Element 0602787A (Medical Technology) / Project MK4 (Cbt Casualty Care Applied Rsch Technology).

A. Mission Description and Budget Item Justification

This Project will deliver a tested delivery system for behavioral health interventions oriented to far forward settings that will ensure the psychological readiness of Soldiers and safeguard their far forward readiness and performance in austere operating environments, under high intensity operational stressors.

The cited research is fully coordinated with Program Element (PE) 0602143A (Soldier Lethality Technology) and complimentary to PE 0603118A (Soldier Lethality Advanced Technology), and is fully coordinated with other Services in order to avoid duplication of effort.

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Far Forward Behavioral Health Care	1.080	0.273	-
Description: This effort will deliver a tested delivery system for behavioral health interventions oriented to far-forward settings that will ensure the psychological readiness of Soldiers and safeguard their far-forward readiness and performance in austere operating environments, under high intensity operational stressors.			
FY 2022 Plans: Will complete sleep leadership training data analyses demonstrating efficacy of training for improving sleep leadership and sleep behaviors and transition, a brief sleep leadership training module intended for Behavioral Health Officers (BHOs) or their equivalent to provide to unit leadership teams. The training module will be delivered to the United States (US) Army Medical Center of Excellence (MEDCoE) to be incorporated into training courses and to the Office of the Surgeon General (OTSG)			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MN9 / *Far Forward Behavioral Health Care Advanced Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Behavioral Health Service Line (BHSL). Will optimize the sleep leadership training by conducting interviews with BHOs and incorporating feedback to increase usability, feasibility, and impact of training. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.010	-
Accomplishments/Planned Programs Subtotals	1.080	0.283	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MO2 / *Traumatic Brain Injury (TBI) Treatment Adv Tech*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MO2: *Traumatic Brain Injury (TBI) Treatment Adv Tech*	-	4.649	10.667	-	-	-	-	-	-	-	0.000	15.316
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Starting in Fiscal Year 2023 (FY23), funding and mission in this project are realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.

A. Mission Description and Budget Item Justification

This Project covers development, demonstration, transition of technologies for acute battlefield management of brain trauma, and maintains laboratory capability to perform these functions. Efforts include pre-clinical demonstration of drug therapy and resuscitation strategies for treatment of acute brain injury in the pre-hospital setting, biomarkers, diagnostics, and devices, as well as novel drug delivery technologies to facilitate administration of pharmaceuticals at or near the point of injury to protect the injured brain from further damage.

All research is conducted in compliance with Food and Drug Administration (FDA) requirements for licensure of medical products for human use.

Promising efforts identified through Applied Research conducted under Program element (PE) 0602787A (Medical Technology) / Project MM4 (Cbt Casualty Care Applied Rsch Technology) are further matured under this Project. Promising results identified under this Project are further matured under PE 0603807A (Medical Systems Advanced Development) / Project 836 (Field Medical Systems Advanced Development).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Drugs to Prevent and Treat Brain Injury (TBI)	4.649	10.418	-
Description: Develop, demonstrate, and transition technologies to treat combat-related brain injury. Technologies include drugs administered at or near the point of injury to treat combat-related brain injury while also stabilizing and protecting non-injured brain tissues, and novel drug delivery platforms that specifically target injured brain cells.			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MO2 / *Traumatic Brain Injury (TBI) Treatment Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Will evaluate a novel drug-releasing gel material designed for application at point of injury that will safely seal open penetrating brain injuries, protecting exposed brain tissue from further injury while simultaneously releasing potent anti-inflammatory, antibiotic drugs directly to the injured brain; validate prehospital intranasal administration of drugs to preserve brain cell function following traumatic brain injury. Will continue studies to demonstrate effectiveness of new drugs developed to preserve brain cell function following traumatic brain injury; optimize approaches to treating traumatic brain injured casualties, who have also been exposed to nerve agent. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.249	-
Accomplishments/Planned Programs Subtotals	4.649	10.667	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040 / 3					R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*				Project (Number/Name) MO4 / *Burn Recovery Optimization Advanced Technology*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
MO4: *Burn Recovery Optimization Advanced Technology*	-	3.326	2.059	-	-	-	-	-	-	-	0.000	5.385
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Starting in Fiscal Year 2023 (FY23), funding and mission in this project are realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.

A. Mission Description and Budget Item Justification

This Project covers technology development, demonstration, and transition of burn recovery optimization technologies, including diagnostic technology to predict skin graft success or failure, technologies to measure and predict burn wound healing rate and assess burn treatment effectiveness, and novel dressings that protect severe burn wounds from further injury and prevent inflammation and infection until definitive surgical burn care is available.

All research is conducted in compliance with Food and Drug Administration (FDA) requirements for licensure of medical products for human use.

Promising efforts identified through Applied Research conducted under Program Element (PE) 0602787A (Medical Technology) / Project MM4 (Cbt Casualty Care Applied Rsch Technology) are further matured under this Project. Promising results identified under this Project are further matured under PE 0603807A (Medical Systems Advanced Development) / Project 836 (Field Medical Systems Advanced Development).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Rapid Burn Injury Treatment and Return to Duty Capability Set 1	3.326	2.035	-
Description: Mature, demonstrate, and transition burn recovery optimization technologies. These include diagnostic technology to predict skin graft success or failure, and advanced dressings that contain anti-infective and anti-inflammatory agents for prehospital use to protect severe burn wounds from further injury, infection and inflammation for prolonged periods until definitive surgical wound care is provided.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MO4 / *Burn Recovery Optimization Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Validate best approach for giving fluids to burn patients (by mouth or intravenously) through a small clinical study; demonstrate new therapies to be deployed by medics at the point of injury to safely remove dead skin and underlying tissues from burn wounds in order to prevent infection; validate two new anti-bacterial agents to provide data for which is most effective in reducing infections in burn wounds; perform validation studies of a hand-held device designed to assess severity of burn wounds through non-contact measurement of the wound's size and depth. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.024	-
Accomplishments/Planned Programs Subtotals	3.326	2.059	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MO7 / *Improved Bone Repair Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MO7: *Improved Bone Repair Advanced Technology*	-	1.564	1.069	-	-	-	-	-	-	-	0.000	2.633
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Starting in Fiscal Year 2023 (FY23), funding and mission in this project are realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.

A. Mission Description and Budget Item Justification

This Project matures, demonstrates, and validates promising medical technologies and new clinical practices to improve outcomes following severe limb injuries involving complex bone fractures and injured surrounding soft tissues.

All research is conducted in compliance with Food and Drug Administration (FDA) requirements for licensure of medical products for human use.

Promising efforts identified through Applied Research conducted under Program Element (PE) 0602787A (Medical Technology), Project MM4 (Cbt Casualty Care Applied Rsch Technology), are further matured under this Project. Promising results identified under this Project are further matured under PE 0603807A (Medical Systems Advanced Development), Project 836 (Field Medical Systems Advanced Development).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Limb Function Repair and Return to Combat Duty and Field Stabilization on Bone in Preparation for Evac	1.564	-	-
Description: Development, demonstration, and transition of technologies that improve outcomes, mobility and return to duty following severe limb injuries involving complex bone fractures and injured soft tissues.			
Title: Field Stabilization of Bone in Preparation for Evac	-	0.554	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MO7 / *Improved Bone Repair Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Maturation, demonstration, and transition of technologies that improve outcomes, mobility, and return to duty following severe limb injuries involving complex bone fractures and injured soft tissues in casualties treated under multi-domain operations conditions. ***FY 2022 Plans:*** Develop and demonstrate prototype noninvasive external fixation device for stabilization of lower extremity fractures with weight bearing support to enhance casualty mobility. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: Limb Function Repair and Return to Combat Duty ***Description:*** Maturation, demonstration, and transition of technologies that improve outcomes, and return to duty following severe limb injuries involving complex bone fractures and injured soft tissues. ***FY 2022 Plans:*** Will validate local and regional antibiotic delivery strategies to achieve therapeutic soft tissue antibiotic levels during and after tourniquet induced ischemia (an inadequate blood supply to an extremity) in a large animal model and will validate if intervention reduces level of infection within an open wound distal to the tourniquet; demonstrate alternative portable technologies to aid medics in diagnosing acute extremity compartment syndrome (increased pressure within a confined body space, especially of the leg or forearm. May require surgery and loss tissue or extremity). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.	-	0.496	-
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	0.019	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MO7 / *Improved Bone Repair Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred in accordance with Title 15 USC ?638.			
Accomplishments/Planned Programs Subtotals	1.564	1.069	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MO8 / *Expeditionary Performance Nutrition Advanced Techn*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MO8: *Expeditionary Performance Nutrition Advanced Techn*	-	2.062	1.936	0.175	-	0.175	0.728	0.163	0.163	0.163	0.000	5.390
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project covers the development of real-time, specific, and individualized interventions to optimize mental acuity and fatigue and manage metabolic and nutritional needs to sustain Soldier physical, mental, and immunological performance.

The cited research is fully coordinated with Program element (PE) 0602143A (Soldier Lethality Technology) and complimentary to PE 0603118A (Soldier Lethality Advanced Technology), and is fully coordinated with other Services in order to avoid duplication of effort.

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Medical Strategies to Sustain Soldier Alertness and Performance in All Settings	2.062	1.929	0.175
Description: Develop real-time, specific, and individualized interventions to optimize mental acuity and fatigue and manage metabolic and nutritional needs to sustain Soldier physical, mental, and immunological performance.			
FY 2022 Plans: Will continue validation of interventions to mitigate sleep loss and fatigue and improve individual and team performance in training and operational settings, including multi-domain battle scenarios. Will continue to demonstrate the utility and effectiveness of electrical stimulation technologies that provide direct current to the brain, in addition to acoustic stimulation of brain patterns during sleep, as neurocognitive interventions for the enhancement of recuperative sleep and the development of operationally relevant sleep strategies.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MO8 / *Expeditionary Performance Nutrition Advanced Techn*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Develop evidence-based recommendations for nutritional interventions in Soldiers undergoing strenuous, high OPTEMPO, dispersed and disaggregated operations to reduce physical, cognitive and psychological degradation and provide overmatch capability. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decreased due to realignment of US Army Medical Research and Development Command to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.007	-
Accomplishments/Planned Programs Subtotals	2.062	1.936	0.175

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MO9 / *Vaccines to Prevent Dengue Fever Advanced Tech*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MO9: *Vaccines to Prevent Dengue Fever Advanced Tech*	-	2.037	-	-	-	-	-	-	-	-	0.000	2.037
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project covers technology development, demonstration and transition of a candidate vaccine for the prevention of Dengue fever caused by any of the four Dengue virus serotypes. The vaccine is intended to be effective in people with and without a prior history of Dengue infection. Research is conducted in compliance with Food and Drug Administration (FDA) regulations for medical products for human use.

Promising medical countermeasures identified in this Project are further matured under Program Element 0603807A (Medical Systems Advanced Development) / Project 808 (DoD Drug & Vacc Ad).

The cited research is consistent with the Under Secretary of Defense (Research and Engineering) science and technology focus areas and the Army Modernization Strategy.

Research is managed by the United States Army Medical Research and Development Command (USAMRDC) in coordination with the Naval Medical Research Center (NMRC). The Army is responsible for programming and funding all Department of Defense (DoD) naturally occurring infectious disease research requirements, thereby precluding duplication of effort within the Military Departments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Vaccines to Prevent Dengue Fever Advanced Technology	2.037	-	-
Description: Perform Good Manufacturing Practice (GMP) manufacture of Dengue vaccine candidate. Demonstrate Dengue vaccine candidate safety, effectiveness, and pharmacokinetics in humans. Transition the Dengue vaccine candidate to product developer.			
Accomplishments/Planned Programs Subtotals	2.037	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MO9 / *Vaccines to Prevent Dengue Fever Advanced Tech*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 3	R-1 Program Element (Number/Name) PE 0603002A / *Medical Advanced Technology*	Project (Number/Name) MP3 / *Phys Chem Toxicity Assessment Sys Adv Tech*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MP3: *Phys Chem Toxicity Assessment Sys Adv Tech*	-	2.590	2.291	1.839	-	1.839	1.790	1.073	0.355	0.354	0.000	10.292
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project covers the development of products and solutions that will protect and prevent degradation of Soldier health, readiness and performance from environmental stressors (heat, cold, altitude, and chemical toxicants) while conducting prolonged operations in Multi-Domain Operations (MDO). Develop algorithms and physiological models to inform unit leaders and Soldiers and provide actionable information and interventions to manage metabolic needs, maintain performance, and avoid non-battle injuries while operating in extreme environments.

This Project contains no duplication with any effort within the Military Departments and includes direct participation by other Services. The cited research is fully coordinated with Program Element (PE) 0602143A (Soldier Lethality Technology) and complimentary to PE 0603118A (Soldier Lethality Advanced Technology).

The cited research is consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology, focus areas and the Army Modernization Strategy.

Research in this Project is performed by the United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Solutions to Sustain Warfighter Performance in Extreme Environments	2.590	2.208	1.839
Description: Protect and prevent degradation of Soldier health, readiness and performance from environmental stressors (heat, cold, altitude, chemical toxicants) while conducting prolonged operations in the MDO. Develop algorithms and physiological models to inform unit leaders and Soldiers and provide actionable information and interventions to manage metabolic needs, maintain performance, and avoid non-battle injuries while operating in extreme environments.			
FY 2022 Plans: Will provide validated tools to sustain lethality and optimize performance and to prevent injuries related to multi-environmental stressors; optimize capability to improve performance and thermal comfort in hot environments using innovative cooling technology; deliver to advanced development mature and validated algorithms for exertional heat injury, acute mountain sickness, and cold-weather clothing selection; complete animal model to demonstrate capability to use real-time physiological data to			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 3	**R-1 Program Element (Number/Name)** PE 0603002A / *Medical Advanced Technology*	**Project (Number/Name)** MP3 / *Phys Chem Toxicity Assessment Sys Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
determine the extent to which an individual has been exposed to a toxic chemical; begin validation of method for cold habituation to improve cold tolerance and comfort when operating in arctic conditions. ***FY 2023 Plans:*** Will provide validated tools to sustain lethality and optimize performance and to prevent injuries related to multi-environmental stressors; optimize capability to improve performance and thermal comfort in hot environments using innovative cooling technology; deliver to advanced development mature and validated algorithms for exertional heat injury, acute mountain sickness, and cold-weather clothing selection; begin validation of method for cold habituation to improve cold tolerance and comfort and reduce frostbite when operating in arctic conditions; and conduct field validation and acceptability of novel physiological status monitoring (PSM) compression shirts. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decreased due to realignment of US Army Medical Research and Development Command to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737). Funding transferred to Program Element 0603115DHA, Project Code 373H.			
Title: SBIR/STTR Tax ***FY 2022 Plans:*** SBIR/STTR tax. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638.	-	0.083	-
Accomplishments/Planned Programs Subtotals	2.590	2.291	1.839

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A