

**Defense Health Program  
Fiscal Year (FY) 2009 Budget Estimates  
Exhibit R-2, DHP RDT&E Budget Item Justification**

Appropriation/Budget Activity  
Defense Health Program/BA: 2

DATE: February 2008  
R1 Item Nomenclature: 5  
Medical Development  
0603115HP

COST: (Dollars in Thousands)

	2007 Actual	2008 Estimate	2009 Estimate	2010 Estimate	2011 Estimate	2012 Estimate	2013 Estimate
<b>Total PE 0603115</b>	598.128	416.572	38.077	38.981	39.898	40.836	41.796
<b>Deployed Warfighter Protection (Army)</b>	4.875	4.875	5.000	5.100	5.202	5.306	5.412
<b>Medical Development (Lab Support) (Navy)</b>	18.962	19.331	20.258	20.742	21.228	21.725	22.234
<b>Epidemic Outbreak Surveillance (Air Force)</b>	5.850	1.560	1.600	5.728	5.854	5.977	6.107
<b>Medical Modernization Programs (Air Force)</b>	1.950	4.101	4.419	3.100	3.200	3.300	3.400
<b>Advanced Diagnostic Laboratory (ADL), San Antonio, TX (Air Force)</b>	1.950	2.048	2.150	2.210	2.260	2.320	2.380
<b>Institute of Aerospace Medicine (IAM) (Air Force)</b>	0.000	1.950	2.050	2.101	2.154	2.208	2.263
<b>Copper Antimicrobial Research Program (Army)</b>	0.000	2.925	0.000	0.000	0.000	0.000	0.000

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Defense Graduate Psychology Education Program (USUHS)	2.817	0.000	0.000	0.000	0.000	0.000	0.000
Global HIV/AIDS Prevention (Navy)	0.000	7.800	0.000	0.000	0.000	0.000	0.000
Hawaii Federal Healthcare Network (Army)	0.000	24.375	0.000	0.000	0.000	0.000	0.000
New National Diabetes Model Program (Air Force)	21.369	19.500	0.000	0.000	0.000	0.000	0.000
Ovarian Cancer Research (Army)	9.750	9.750	0.000	0.000	0.000	0.000	0.000
Peer Reviewed Breast Cancer Research (Army)	124.312	134.550	0.000	0.000	0.000	0.000	0.000
Peer Reviewed Prostate Cancer Research (Army)	78.000	78.000	0.000	0.000	0.000	0.000	0.000
Peer Reviewed Medical Research Program (Army)	0.000	48.750	0.000	0.000	0.000	0.000	0.000

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Pharmacological Countermeasures to Ionizing Radiation (USUHS)	1.682	3.705	0.000	0.000	0.000	0.000	0.000
Stress Disorders Research Initiative at Fort Hood (Army)	0.000	2.652	0.000	0.000	0.000	0.000	0.000
Telerobotic and Minimally Invasive Surgery at WRAMC (Army)	0.000	0.975	0.000	0.000	0.000	0.000	0.000
Tuberous Sclerosis Complex (TSC) Research (Army)	0.000	3.900	0.000	0.000	0.000	0.000	0.000
US Military Cancer Institute (USUHS)	0.000	3.900	0.000	0.000	0.000	0.000	0.000
Virtual Medical Trainer (Air Force)	2.137	0.000	0.000	0.000	0.000	0.000	0.000
Preventing Epilepsy After Traumatic Brain Injury (Army)	0.000	1.170	0.000	0.000	0.000	0.000	0.000
Malaria Research (Army)	0.000	1.950	0.000	0.000	0.000	0.000	0.000

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Clinical Research (Air Force)	0.000	2.535	2.600	0.000	0.000	0.000	0.000
Fort Jackson Identifying Health Barriers Project (Army)	0.000	2.340	0.000	0.000	0.000	0.000	0.000
Gynecological Cancer Center at Walter Reed AMC (Army)	0.000	3.900	0.000	0.000	0.000	0.000	0.000
Integrated Transitional Prostate Disease Research @ Walter Reed AMC (USUHS)	0.000	4.875	0.000	0.000	0.000	0.000	0.000
Integrated Cardiac Health Care @ Walter Reed AMC (Army)	0.000	3.900	0.000	0.000	0.000	0.000	0.000
LED Wound Healing of Oral and Cutaneous Lesions (Air Force)	0.000	3.120	0.000	0.000	0.000	0.000	0.000
Advanced Military Wound Healing and Treatment (Army)	0.000	0.975	0.000	0.000	0.000	0.000	0.000

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<b>Autism Research (Army)</b>	0.000	6.240	0.000	0.000	0.000	0.000	0.000
<b>Universal Immunization Tracking System (Army)</b>	0.000	3.120	0.000	0.000	0.000	0.000	0.000
<b>Vanadium Safety Readiness (Army)</b>	0.000	2.925	0.000	0.000	0.000	0.000	0.000
<b>Nutrition Research (Army)</b>	1.067	0.000	0.000	0.000	0.000	0.000	0.000
<b>Muscular Dystrophy Research (Army)</b>	0.000	3.900	0.000	0.000	0.000	0.000	0.000
<b>Bone Marrow Failure Disorder Research (Army)</b>	0.000	0.975	0.000	0.000	0.000	0.000	0.000
<b>Peer Reviewed Post Traumatic Stress Disorder Research (Army)</b>	146.250	0.000	0.000	0.000	0.000	0.000	0.000
<b>Peer Reviewed Traumatic Brain Injury Research (Army)</b>	146.250	0.000	0.000	0.000	0.000	0.000	0.000

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	2007 Actual	2008 Estimate	2009 Estimate	2010 Estimate	2011 Estimate	2012 Estimate	2013 Estimate
<b>Peer Reviewed Burn, Orthopedic, and Trauma Research (Army)</b>	30.907	0.000	0.000	0.000	0.000	0.000	0.000

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** For the Air Force Medical Service elements, the program supports the Research, Development, Test and Evaluation efforts needed to address ongoing and planned Air Force Medical Service modernization initiatives, which are aimed to

- 1) Improve recovery of individuals from illness and/or injury, enhance clinical response (modernized diagnostics, therapeutics, and critical care air transport capabilities), treatment and management, and return individuals to duty status. Also, enhances human health and performance to maximize effectiveness and ability to operate.
- 2) Improve human ability (i.e. visual, auditory, cognitive) to operate under adverse environments to include CBRNE, directed energy, and high operational tempo (human system integration initiatives will play a pivotal role in addressing these requirements).
- 3) Enhance capabilities for the maintenance of a fit and healthy force (example mission foods/special diets for the warfighter based on mission scenarios).
- 4) Enhance Force Health Protection through advanced Health Surveillance capabilities emphasizing improved diagnostics (Epidemic Outbreak Surveillance platforms); Advanced therapeutics & forensics with emphasis on organ systems, diseases, vectors, toxins, occupational toxicology and analytical systems-specific technologies such as: molecular diagnostics, surface detection to molecule sensitivity, gene therapy, miniaturization-hand held/point of care delivery tools, and surveillance capabilities.
- 5) Optimize warfighter performance through effective Human Systems Integration in all environments; maintain warfighter orientation and awareness; and providing technologies for the detection, prevention, and mitigation of adverse human effects. Performance optimization efforts will focus on: hydration, nutrition,

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musculoskeleton, fatigue, cognitive, and fitness factors. Orientation and awareness efforts will address: spatial disorientation countermeasures, ocular enhancement, auditory enhancement, and proprioceptive enhancement issues.

6) Improve clinical processes, methods, tools and techniques for prevention, diagnosis, treatment, and rehabilitation of critically wounded warriors, addressing the needs for advanced devices and protocols for trauma resuscitation, enroute critical care transport, organ failure and intervention, traumatic brain injury, PTSD, wound care, pain, infection & clinically-based visual acuity/cognitive assessments (operationally-based vision assessment).

7) Counter threats to Humans from improvised Directed Energy (DE) weapons, with emphasis on threat detection, identification, quantification and mitigation, and counter-proliferation covering threat sensing/warning, threat analytics, standoff detection, exposure analysis/assessment.

The Army Medical Command programs for the Deployed Warfighter Protection project that provides for the development of new or improved protection of ground forces from disease-carrying insects. The focus of this program is to: develop new or improved systems for controlling insects that carry disease 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 available for safe, insecticidal application.

The Army Medical Command also receives Congressionally directed research programs. The strategy for the FY 08 Congressionally directed research identified above is to stimulate innovative research through a competitive, peer-reviewed research program as well as focused medical research at selected Army sites. Specific research efforts include programs such as epilepsy prevention after traumatic brain injury, telerobotic and minimally invasive surgery, copper antimicrobial research, stress disorder research initiatives, malaria research, identifying health barriers, gynecological cancer center studies, integrated cardiac health care, advanced military wound healing and treatment, autism research, universal immunization tracking, vanadium safety readiness, peer reviewed medical research, Hawaii federal healthcare network, tuberous sclerosis complex, and muscular dystrophy, and ongoing programs, such as breast, prostate and ovarian cancer research. Because of their congressional annual structure there are no out-year funds programmed.

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For the Navy, Bureau of Medicine and Surgery (BUMED), this program element includes DHP RDT&E funds for operating and miscellaneous support costs at DHP RDT&E laboratories and other installations, facility and civilian personnel costs not directly chargeable to DHP RDT&E projects. Also includes DHP RDT&E funds for DHP RDT&E laboratories and facilities for research, support, equipment and other investment and materiel support costs. This program element excludes military manpower and related costs, non-RDT&E, Navy base operating costs, and military construction costs, which are included in other appropriations.

For the Uniformed Services University of the Health Sciences (USUHS), this program element contains only Congressionally mandated requirements for medical research. Congressionally mandated medical requirements were appropriated as part of the Defense Health Program, beginning in Fiscal Year 1999 National Defense Appropriation Act, for specific medical RDT&E projects; items which have never been programmed by DoD. The Uniformed Services University of the Health Sciences goals for these programs are (1) building a national research infrastructure by funding large, multidisciplinary program projects focused on detection and disease/injury prevention and treatment; (2) conduct research into biomedical strategies for preventing, treating, assessing and predicting the health effects of human exposure to ionizing radiation; (3) encouraging innovative approaches to research by funding new ideas and technology with or without supporting preliminary data; and (4) recruiting new, independent investigators for careers in research, as well as more senior investigators new to the research field.

**B. PROGRAM CHANGE SUMMARY:**

	<u>2007</u>	<u>2008</u>	<u>2009</u>
FY09 Budget Estimate RDT&E	598.128	37.333	38.077
Congressional Special Interest	0.000	389.920	0.000
SBIR	0.000	-10.681	0.000
Transfer	0.000	0.000	0.000
FY09 Budget Submission RDT&E	598.128	416.572	38.077

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**PROGRAM CHANGE SUMMARY EXPLANATION:**

In FY 2008, increases for Congressional Special Interest less Small Business Innovative Research is as follows: Bone Marrow Failure Disorder Research (\$975K); New National Diabetes Model Program (\$19,500K); Light Emitting Diode Wound Healing of Oral and Cutaneous Lesions (\$3,120K); Preventing Epilepsy after Traumatic Brain Injury (\$1,170K); Telerobotic and Minimally Invasive Surgery at Walter Reed AMC (\$975K); Copper Antimicrobial Research Program (\$2,925K); Stress Disorders Research Initiative at Fort Hood (\$2,652K); Malaria Research (\$1,950K); Fort Jackson Identifying Health Barriers Project (\$2,340K); Gynecological Cancer Center at Walter Reed AMC (\$3,900K); Integrated Cardiac Health Care at Walter Reed AMC (\$3,900K); Advanced Military Wound Healing and Treatment (\$975K); Autism Research (\$6,240K); Universal Immunization Tracking System (\$3,120K); Vanadium Safety Readiness (\$2,925K); Ovarian Cancer Research (\$9,750K); Peer-Review Breast Cancer Research (\$134,550K); Peer-Review Prostate Cancer Research (\$78,000K); Peer-Review Medical Research (\$48,750K); Hawaii Federal Health Network (\$24,375K); Tuberous Sclerosis Complex (TSC) Research (\$3,900K); Muscular Dystrophy Research (\$3,900K); Global HIV/AIDS Prevention (\$7,800K); Pharmacological Countermeasures to Ionizing Radiation (\$3,705K); Integrated Transitional Prostate Disease Research at Walter Reed AMC (\$4,875K); and US Military Cancer Institute at USUHS (\$3,900K).

**C. OTHER PROGRAM FUNDING SUMMARY:**

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>
DHP Operation & Maintenance							
BA-1, PE 0807714	4.990	5.521	5.687	2.857	6.033	6.214	6.400

**D. ACQUISITION STRATEGY:** Not Required

**E. PERFORMANCE METRICS:** Not Required