

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1999

BUDGET ACTIVITY

3 - Advanced Technology Development

PE NUMBER AND TITLE

0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)

COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	43517	52212	40910	44881	52169	61227	81949	79738	Continuing	Continuing
CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	13446	13099	5523	5073	7749	10547	13008	14297	Continuing	Continuing
CP3 COUNTERPROLIFERATION SUPPORT	7271	7352	10549	10276	11499	7380	7733	13477	Continuing	Continuing
TB3 MEDICAL BIOLOGICAL DEFENSE (INDUSTRIAL BASE)	12876	14565	15393	20103	23230	33421	50787	41225	Continuing	Continuing
TC3 MEDICAL CHEMICAL DEFENSE (LIFE SPT)	9924	17196	9445	9429	9691	9879	10421	10739	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element demonstrates technologies that enhance U.S. forces' ability to deter, defend against, and survive chemical and biological (CB) warfare. This PE funds advanced technology development for Joint Service and Service-specific requirements in both medical and non-medical CB defense areas. The medical program aims to produce drugs, vaccines, and medical devices as countermeasures against CB threat agents. Specific areas of medical investigation include: prophylaxis, pretreatment, antidotes and therapeutics, personnel and patient decontamination and medical management of casualties. In the non-medical area, the focus is on demonstrations of CB defense technologies, including biological detection, chemical detection and decontamination. These demonstrations, conducted in an operational environment with active user and developer participation, integrate diverse technologies to improve DoD Chemical/Biological Warfare (CBW) defense and deterrence. These demonstrations are leveraged by the Counterproliferation Support Program and include remote Biological Detection. Work conducted under this PE transitions to and provides risk reduction for Demonstration/Validation (PE 0603884BP) and Engineering/Manufacturing Development (PE 0604384BP) activities. The work in this program element is consistent with the Joint Service Research, Development and Acquisition (RDA) Plan. This program element also provides for the conduct of advanced technology development in the areas of real-time sensing, accelerated BW operational awareness and the restoration of operations following a BW/CW attack. This program is dedicated to conducting proof of principle field demonstrations and tests of system-specific technologies to meet specific military needs.

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B. Program Change Summary:	FY 1998	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY1999 PB)	41223	42762	36571	36514
Appropriated Value	39789	51610		
Adjustments to Appropriated Value				
a. Congressional General Reductions				
b. SBIR/STTR	-669			
c. Omnibus or Other Above Threshold Reductions				
d. Below Threshold Reprogramming	4397	602		
e. Rescissions				
Adjustments to Budget Years Since FY 1999 PB			4339	8367
Current Budget Submit (FY2000/FY2001 PB)	43517	52212	40910	44881

Change Summary Explanation:

Funding: FY99 - TB3 (602) PDM I plus up for increased USAMRIID Bio RDTE efforts. FY00 - CB3 (-94) moved for higher priority efforts; TB3 (1784) PDM I plus up for increased USAMRIID Bio RDTE efforts, TB3 (-230) moved for higher priority efforts, TC3 (-160) moved for higher priority efforts, CP3 RESTOPS (3726) program restructured to fund upfront efforts for RESTOPS ACTD, (-687) revised economic assumptions. FY01 - CB3 (-171) moved for higher priority efforts; TB3 (4714) PDM I plus up for increased USAMRIID Bio RDTE efforts, TB3 (2000) PDM I plus up to transition DARPA medical diagnostics and therapy, TB3 (-455) moved for higher priority efforts, TC3 (-317) moved for higher priority efforts, CP3 RESTOPS (3398) program restructured to fund upfront efforts for RESTOPS ACTD, (-802) revised economic assumptions.

Schedule:

Technical:

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BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)					PROJECT CB3		
COST (In Thousands)		FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CB3	CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	13446	13099	5523	5073	7749	10547	13008	14297	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification:</p> <p>Project CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV): This project demonstrates technology advancements for Joint Service application in the areas of: agent detection and identification, decontamination, and individual/collective protection which will speed maturing of advanced technologies to reduce risk in system-oriented Demonstration and Validation. This project funds the Integrated Biodetection Advanced Technology Demonstration (ATD). This ATD will fabricate, demonstrate and integrate advanced point and standoff biodetection technologies. This project is the only DoD program demonstrating new technologies to counter biological warfare threats and improving current developmental biodetection systems. This program also funds the Chemical Biological Incident Response Force (CBIRF), Small Unit Biological Detector (SUBD) in support of consequence management against terrorist-initiated NBC incidents by demonstrating and developing state-of-the-art sensor technology.</p> <p>FY 1998 Accomplishments:</p> <ul style="list-style-type: none"> 5277 Bio ATD - Concluded development and demonstrated the capability of remotely-deployed integrated biodetection network to provide an early warning capability to high value targets. Continued development of Auto DNA Diagnostic (ADD) technology. Developed Bio modules for ATD. 773 JS Large Area Decon - Evaluated the efficacy of Non-Developmental decontaminants in laboratory and panel testing procedures. Assessed efficacy of decontaminants in conjunction with applicator systems in chamber studies. Conducted engineering testing and evaluation of novel applicator systems. Performed market survey of Non-Developmental Items (NDI) and identified most promising new leads. 1281 JSWILD - Initiated design and fabrication of brassboard system for Joint Service Warning and Identification Lidar Detector (JSWILD). 1186 SUBD - Awarded contract to develop and demonstrate microfluidics optical sensor technology. 997 SUBD - Awarded contract to optimize fluorochrome based sensor technology for demonstration and test to enhance hand-held detector applications. 1242 SUBD - Awarded contract to develop an improved Small Unit Biological Detector using demonstrated improved sensor technology. 2690 Biocide Decon - Continued development of advanced biocide CBW protection material and application for personal protection and casualty care. Continued front end analysis and development of a new decontamination master plan. <p>Total 13446</p>											
Project CB3		Page 3 of 15 Pages					Exhibit R-2 (PE 0603384BP)				

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(ADVANCED DEVELOPMENT)

PROJECT

CB3

FY 1999 Planned Program:

- 5959 Bio ATD - Conclude development, miniaturization of third-generation UV fluorescence sensor. Complete, evaluate first-generation ADD. Participate, demonstrate in Battle Lab Warfighter Experiment.
- 2961 JSWILD - Continue fabrication of brassboard system and initiate planning for demonstration of system.
- 920 JS Large Area Decon - Complete front end analysis of technologies to address multiple decontamination scenarios which include: skin and personal equipment decontamination, equipment decontamination in the field, equipment decontamination at fixed facilities, key areas at fixed facilities, sensitive equipment decontamination and decontamination of interior spaces containing sensitive items, surfaces and cargo. Identify and prioritize technologies for each functional area. and staff a master plan incorporating newly identified leads which will drive the S&T area for the coming developmental cycle.
- 1541 MONOPAC and Service Life Initiatives (Prev: Tractor Dirt) - Prepare a fully permeable single layer (shell and liner) "monopak" chemically protective material for transition to the next joint protective ensemble program. A Chemical Protective Combat Uniform (CPCU) will be constructed using the latest Army/Navy closure concepts for a comprehensive durability (7 day) field trial. There is no field expedient way to access the current condition of chemically protective uniforms. Residual Life Initiative (RLI) addresses this on-going concern and during FY99 plans assess and develop several promising concepts. All material and concept item performance will be fully characterized as part of the transition support package.
- 1500 Biocide Ensembles (ATD) - Continue development of advanced biocide CBW protection material and application for personal protection and casualty care.
- 218 SBIR/STTR

Total 13099

FY 2000 Planned Program:

- 5160 Detection Technologies - Demonstrate brassboard capabilities in field testing with sufficient laser power and detector sensitivity to detect agents at a distance of 20 km (a 400 percent increase from the FY96 baseline).
- 363 MONOPAC and Service Life Initiatives (Prev: Tractor Dirt) - Final transition of "monopak" concept items. Delivery of RLI concept items and/or technology assessment reports. Conduct initial RLI concept item demonstration and transition best efforts to follow-on developmental projects.

Total 5523

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CB3

FY 2001 Planned Program:

- 5073 Detection Technologies - Initiate design of brassboard system. Initiate planning for demonstration of the Joint Chem/Bio Agent Water Monitor (JCBAWM).

Total 5073

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BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)					PROJECT CP3		
COST (In Thousands)		FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CP3	COUNTERPROLIFERATION SUPPORT	7271	7352	10549	10276	11499	7380	7733	13477	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification:</p> <p>Project CP3 COUNTERPROLIFERATION SUPPORT: The mission of the Counterproliferation Program (CP) is to address shortfalls in DoD's deployed capability to defend against and counter the proliferation of weapons of mass destruction (WMD). By focusing on short term results, the CP accelerates delivery of new tools, equipment and procedures to combat forces. Under the passive defense pillar, CP enhances the efforts of the Chemical and Biological Defense Program. This program funds a variety of projects to defend our forces against WMD, such as the Air Base/Port Biological Detection Advanced Concept Technology Demonstration (ABPACTD), Biological Detection (BIODET), and Restoration Operations (RestOps).</p> <p>FY 1998 Accomplishments:</p> <ul style="list-style-type: none"> 930 ABPACTD - Completed development/integration of software/hardware interfaces for biological and chemical detectors. Demonstrated automated warning and reporting from bio-network during Air Base/Port Biological Detection (Portal Shield) ACTD field trials. 3492 BIODET - Continued advanced technologies development for a high sensitivity, broadband miniaturized mass spectrometer for identification and classification of biological and chemical agents. 500 BIODET - Continued advanced materials and technologies development for the Air Sampler and Concentrator for Biological Materials. 1100 BIODET - Continued upconverting phosphor technology development for miniaturized flow cytometer biological agent detection prototype. 279 BIO Non Sys - Continued background aerosol particle and liquid sampling for identification of battlefield interferents outside the continental United States (OCONUS) fixed sites assets and established an accessible database. 970 RestOps - Initiated preliminary investigation of available technologies to do restoration of operations. Prepared description of actual exercises to baseline current capability to do restoration of operations with emphasis on identifying areas of improvement. <p>Total 7271</p>											
Project CP3		Page 6 of 15 Pages					Exhibit R-2 (PE 0603384BP)				

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(ADVANCED DEVELOPMENT)

CP3

FY 1999 Planned Program:

- 600 BIODET - Transition advanced materials technologies developed for the Miniaturized Environmental Air Sampler and Concentrator for Biological Materials to the combined aerosol sampler and detector.
- 3146 BIODET - Continue advanced technologies development for high sensitivity biological/chemical agent detection using broadband, miniaturized mass spectrometer techniques.
- 985 BIODET - Continue to transition upconverting phosphor technology development for miniaturized flow cytometer biological agent detection prototype.
- 594 BIO Non Sys - Continue background aerosol particle and liquid sampling for identification of battlefield interferents at outside the continental United States (OCONUS) fixed sites assets.
- 1905 RestOps - Continue concept development for technology prototyping with supporting survivability and hazard analysis for restoration of operations.
- 122 SBIR/STTR

Total 7352

FY 2000 Planned Program:

- 984 BIODET - Initiate development of biological identification system using nucleic acids.
- 492 BIODET - Complete transition of upconverting phosphorous technology development for miniaturized flow cytometer biological agent detection prototype.
- 1427 BIODET - Complete first generation of Biological Time-of-Flight (BIOTOF) Mass Spectrometer for transition to field testing.
- 388 CRP - Develop reagents (anti-bodies and antigens) that are critical to the development, testing, and support of CP Biological Detection Systems.
- 1936 BIO Non Sys - Initiate development of automated sample preparation for Polymerase Chain Reaction (PCR) devices.
- 1451 BIO Non Sys - Initiate development of non-specific BW colorimetric gene assay.
- 1934 RestOps - Initiate development of next generation chemical/biological transport models (to include complex terrain and urban environment) and simulations for CINC Logistics/Warfighting Planning Tools.
- 1937 RestOps - Initiate development of novel chemical/biological decontaminants.

Total 10549

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PROJECT

CP3

FY 2001 Planned Program:

- 1742 BIODET - Continue development of biological identification system using nucleic acids.
- 983 BIODET - Initiate development of new antibodies or their replacements using advanced molecular techniques.
- 388 CRP - Continue to develop reagents (anti-bodies and antigens) that are critical to the development, testing, and support of CP Biological Detection Systems.
- 1836 BIO Non Sys - Continue development of non-specific BW colormetric gene assay.
- 1836 BIO Non Sys - Continue development of automated sample preparation for Polymerase Chain Reaction (PCR) devices.
- 786 BIO Non Sys - Initiate development for mini-environmental air sampler.
- 1353 RestOps - Continue development of next generation chemical/biological transport models (to include complex terrain and urban environment) and simulations for CINC Logistics/Warfighting Planning Tools.
- 1352 RestOps - Continue development of novel chemical/biological decontaminants.

Total 10276

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BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)					PROJECT TB3		
COST (In Thousands)		FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TB3	MEDICAL BIOLOGICAL DEFENSE (INDUSTRIAL BASE)	12876	14565	15393	20103	23230	33421	50787	41225	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification:</p> <p>Project TB3 MEDICAL BIOLOGICAL DEFENSE (INDUSTRIAL BASE): This project funds preclinical development of safe and effective prophylaxes and therapies (vaccines and drugs) for exposure to biological threat agents. This project also supports the advanced technology development of kits to rapidly diagnose exposure to biological agents in clinical samples. To complete the defensive effort, a broad range of technologies involved in the targeting and delivery of prophylactic and therapeutic medical countermeasures is evaluated to ensure the protection of U.S. forces.</p> <p>FY 1998 Accomplishments:</p> <ul style="list-style-type: none"> • 1280 Carried out final preclinical studies required for transition of plague vaccine to demonstration/validation. • 1553 Performed final evaluation of efficacy of a polyvalent, live, vaccinia-vectored Brucella vaccine in animal model system and established safety of candidate typhus vaccines in animal models. • 1992 Performed head-to-head comparison of confirmation for advanced development and tested preparation of immunologically and nucleic acid-based diagnostic reagents added to hand-held diagnostic devices specific for BW threat agents. • 2034 Prepared final data package for botulinum toxin C-fragment vaccine candidate for advanced development. • 2649 Determined best adjuvant and dose schedule for recombinant staphylococcus enterotoxin B (SEB) vaccine in animal models for lethal and incapacitating effects. • 2062 Conducted testing of ricin vaccine candidates in animal models for safety and efficacy and evaluated surrogate markers of protection. • 957 Developed nucleic acid probes and primers for multiple orthopox gene regions to use in definitive diagnostic tests and evaluated neurovirulence of vaccine candidates against western equine encephalitis (WEE) and eastern equine encephalitis (EEE) viruses. • 349 Completed in vitro testing of filovirus vaccine candidates. <p>Total 12876</p>											
Project TB3		Page 9 of 15 Pages					Exhibit R-2 (PE 0603384BP)				

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BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)	PROJECT TB3
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FY 1999 Planned Program:

- 2897 Compare protective efficacy of live attenuated vs. subunit vaccines, transition Brucella vaccine candidate to Demonstration and Validation phase, and perform initial safety and efficacy studies for typhus vaccine candidates.
- 2487 Evaluate stability and potential interactions of immunological diagnostic reagents prepared and tested on multiplexed platforms.
- 756 Begin to construct models for multivalent vaccines including use of viral or bacterial-vectored vaccines, or DNA vaccines.
- 3060 Determine toxicity of drugs in animal models to evaluate use in treatment of typhus and staphylococcal enterotoxin exposure.
- 2027 Continue clinical trials of ricin A subunit vaccine candidate for safety and efficacy and evaluate surrogate markers of protection.
- 918 Develop data package for milestone transition of EEE virus and WEE virus vaccine and construct final early rapid assay and final confirmation-level assay systems for the orthopox viruses to differentiate smallpox.
- 1597 Evaluate the safety and efficacy of filovirus vaccine candidates in animal models.
- 591 Expand on comparison of candidate diagnostic technologies in applied research on diagnostic devices and tests. Initiate demonstration of usefulness of existing candidate medical countermeasures applied to emerging threat agents or genetically engineered microbes. Initiate demonstration of efficacy of therapies derived from knowledge of genomic sequences of threat agents and their virulence factors. Compare candidate surrogate markers of immunity for validation as acceptable markers of vaccine efficacy. Develop system for comparison of database created by genomic sequencing of threat agents and their virulence factors. Prepare demonstrations of animal models defining agent pathogenesis and immunology.
- 232 SBIR/STTR

Total 14565

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TB3

FY 2000 Planned Program:

- 1038 Begin evaluation of immunogenicity for combined products and examine for possible interference effects.
- 807 Transition a multivalent vaccine effective against VEE type 1 A/B/C, 1E, and III.
- 288 Compare efficacy of candidate therapeutic countermeasures against aerosol challenge by orthopox viruses.
- 2306 Compare candidate vaccines for protection against aerosolized filoviruses.
- 1154 Validate immunologically based diagnostic assays for specific BW agents.
- 1961 Prepare a decision package for transition to advanced development of a ricin A subunit vaccine that will protect and reduce lung injury due to inhaled ricin.
- 576 Complete technology data packages supporting transition decisions for candidate vaccine for botulinum toxins.
- 2134 Prepare a decision package for transition of an SEB vaccine to advanced development.
- 1384 Assess and confirm usefulness of new antibiotics against classical threat agents.
- 1991 Initiate comparison of genetic methodologies allowing for rapid identification of genetic association/genetic distance of pathogenic agents.
- 1754 Continue comparison of candidate diagnostic technologies in applied research on diagnostic devices and tests. Continue advanced screening for efficacy of therapeutic interventions gleaned from genomic sequencing studies, as applied to known threat agents. Continue to develop candidate surrogate markers of immunity for validation as acceptable markers of vaccine efficacy. Compare novel therapies and vaccines developed against genetically engineered threats. Prepare preliminary safety and efficacy data for candidate medical countermeasures to emerging threat agents.

Total 15393

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TB3

FY 2001 Planned Program:

- 1733 Test efficacy of combined products (individually and in combined products).
- 347 Conduct advanced screening for safety, efficacy, and toxicity of candidate medical countermeasures to orthopox viruses.
- 2310 Conduct advanced screening for safety, efficacy, and toxicity of candidate filovirus countermeasures.
- 1155 Develop hand-held device to identify threat agent nucleic acids.
- 3017 Evaluate candidate immunomodulation strategies as countermeasures. Prepare decision package for transition to advanced development of candidate immunomodulation countermeasures.
- 2590 Compare genetic methodologies allowing rapid identification of genetic association/genetic distance of pathogenic agents.
- 2355 Conduct advanced screening of selected compounds for safety and efficacy against biological threat agents.
- 1965 Perform a series of laboratory investigations to obtain data necessary for transition of DARPA-developed technologies to DoD applications: safety studies in animals, efficacy studies in animals, definition of surrogate markers of efficacy, pharmacokinetic studies, formulation studies, assay development, down selection of candidate compounds, Investigational New Drug (IND) submission.
- 4631 Validate animal models defining agent pathogenesis and immunology. Complete comparison of candidate diagnostic technologies in applied research on diagnostic devices and tests. Complete development of surrogate markers of immunity for validation as acceptable markers of vaccine efficacy. Complete screening of therapeutic interventions gleaned from genomic sequencing studies, as applied to known threats and their virulence factors. Complete demonstration of usefulness of existing candidate medical countermeasures applied to emerging threat agents or genetically engineered microbes. Demonstrate animals models defining agent pathogenesis and immunology. Demonstrate promising generic medical countermeasures against threat agents for exploratory development studies in suitable model systems.

Total 20103

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BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)					PROJECT TC3		
COST (In Thousands)		FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TC3	MEDICAL CHEMICAL DEFENSE (LIFE SPT)	9924	17196	9445	9429	9691	9879	10421	10739	Continuing	Continuing
<p>A. Mission Description and Budget Item Justification:</p> <p>Project TC3 MEDICAL CHEMICAL DEFENSE (LIFE SPT): This project supports the investigation of new medical countermeasures to include antidotes, pretreatment drugs, and topical skin protectants to protect U.S. forces against known and emerging chemical warfare (CW) threat agents. Capabilities are maintained for reformulation, formulation, and scale-up of candidate compounds using current good laboratory practices (cGLP). Analytical stability studies and safety and efficacy screening, in addition to pre-clinical toxicology studies, are performed prior to full-scale development of promising pretreatment or treatment compounds.</p> <p>FY 1998 Accomplishments:</p> <ul style="list-style-type: none"> • 4918 Consolidated the testing profiles of candidate vesicant pretreatments in animal model systems. Performed toxicity and reactogenicity studies. • 1110 Determined safety and immunologic response in animal models to mutagenized butyrylcholinesterase (BuChE) nerve agent scavengers. • 373 Conducted demonstration of cyanomethemoglobin level blood monitor for chemical casualty assessment leading to Milestone 0 transition. • 1768 Evaluated leading compounds for ability to block nerve agent-induced electroencephalographic (EEG) changes and seizures in non-human primate. • 836 Formulated candidate reactive moieties for reactive topical skin protectant into an acceptable base. • 919 Evaluated, in animals, the effects of improved intracellular delivery of antioxidants to cells undergoing free radical attack due to mustard gas exposure. <p>Total 9924</p>											

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TC3

FY 1999 Planned Program:

- 4869 Perform efficacy and safety studies in appropriate animal model of candidate treatments for vesicant-induced inflammation leading to down-selection for Demonstration and Validation phase.
- 1287 Conduct dose-ranging studies and efficacy studies of candidate nerve agent scavengers in non-human primates.
- 460 Develop and demonstrate computer-assisted expert system for management of chemical casualties to serve as an adjunct to field diagnostics. Determine the efficacy of FDA approved ocular therapies against HD, evaluate available therapeutic interventions to inhalation HD exposure in the pig, and complete testing of therapeutic regimes for HD contaminated wounds.
- 1931 Begin preparation of final data package for advanced anticonvulsant including clinical toxicity, safety and efficacy data for FY00 milestone decision.
- 1010 Perform final reformulation and rank order reactive topical skin protectant candidates. Identify and acquire novel wound decontamination reactive moieties.
- 7353 Chronic low dose efforts will include two National Academy of Sciences Institute of Medicine studies to develop long term research plans as basis for changes in policy and doctrine. Collaborative intramural and extramural efforts will be supported at USAMRICD, USAECBC, AFRRRI and selected Universities.
- 286 SBIR/STTR

Total 17196

FY 2000 Planned Program:

- 6048 Test safety and efficacy of selected improved vesicant countermeasure candidates and initiate transition to improved vesicant countermeasure.
- 1061 Establish efficacy of reactive components in decontamination of wounds.
- 554 Test selected compounds for efficacy and safety against novel threat agents.
- 1782 Test safety and efficacy of improved chemical agent immunoprophylaxis.

Total 9445

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TC3

FY 2001 Planned Program:

- 1616 Test far-forward rapid diagnostic tests in limited field tests.
- 807 Select best candidates and test for safety and efficacy against novel threat agents.
- 2536 Select best candidates and test for efficacy and safety against vesicant agent exposure.
- 4470 Initiate selection of best candidate(s) for improved chemical agent prophylaxis.

Total 9429