

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 3 PROGRAM ELEMENT: 0603729N
PROGRAM ELEMENT TITLE: Warfighter Protection Advanced Technology

COST: (Dollars in Thousands)

PROJECT

NUMBER & TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R2494 Center For Disaster Management								
	2,113							
R2715 Distributed Simulation Warfighting Concepts								
	4,951	3,325						
R2914 Warfighter Protection Advanced Technology								
	13,204	18,620	11,435	12,362	18,688	19,855	20,258	20,661
R9030 Organ Transfer Technology								
	1,921	2,933						
R9031 Damage Control Operational Concepts								
	1,633							
R9161 Medical Data Mining Tool								
	0	5,281						
R9162 Navy Medical System Configuration and Testbed								
	0	7,922						
R9163 Portable Sterile Water Production Device								
	0	977						
TOTAL	23,822	39,058	11,435	12,362	18,688	19,855	20,258	20,661

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program supports the development and demonstration of advanced technologies within the Warfighter Protection Future Naval Capability. Program goals include improved warfighter protection medical equipment, techniques and systems. These technologies enhance Navy and Marine Corps capabilities in Casualty Care and Management, Casualty Prevention, and maintenance of a Healthy and Fit Force. The goal of Casualty Care and Management is to maximize the continuum of care with lifesaving interventions as far forward as possible, in an increasingly lethal battlespace, with reduced infrastructure and logistics. Casualty Prevention includes enhancing warfighter situational awareness and countering threats from disease, battle and non-battle injuries. Healthy and Fit Force efforts preserve health and enhance fitness of ready forces against physical and psychological threats through the continuum of peace and war. Within the Naval Transformational Roadmap, this investment protects the critical "Sea Warrior" component of the overarching "FORCEnet" operating architecture. Additionally, this project supports the transformational capability, Enhanced Sea-borne Positioning of Assets (medical logistics) within "Sea Basing" and the Ship-To-Objective Maneuver capability (expeditionary force medical support) within "Sea Strike".

Due to the number of efforts in this PE, the programs described are representative of the work included in this PE.

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B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget Submission:	28,425	19,040	20,238	18,954
Adjustments from FY 2003 President's Budget:				
Congressional Plus-Ups		20,900		
Cong. Rescissions/Adjustments/Undist. Reductions	-136	-458		
Execution Adjustments	-3,040		-541	
NWCF Rate Adjustments			-37	-15
Efficiencies at NWCF Activities			-14	-16
S&T Program Adjustments			-7,947	-6,295
Pay Raise/Inflation Adjustments		-424	-264	-266
SBIR Reduction	-1427			
FY 2004/2005 President's Budget Submission	23,822	39,058	11,435	12,362

PROGRAM CHANGE SUMMARY EXPLANATION:

Technical: Not Applicable.

Schedule: Not Applicable.

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PROGRAM ELEMENT TITLE: Warfighter Protection Advanced Technology

PROJECT NUMBER: R2914

PROJECT TITLE: Warfighter
Protection Advanced Technology

COST: (Dollars in Thousands)

PROJECT

NUMBER & TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R2914 Warfighter Protection Advanced Technology	13,204	18,620	11,435	12,362	18,688	19,855	20,258	20,661

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the development and demonstration of advanced technologies for improved warfighter protection medical equipment, techniques, technologies and systems. These technologies enhance Navy and Marine Corps capabilities in Casualty Care and Management, Casualty Prevention, and maintenance of a Healthy and Fit Force. The goal of Casualty Care and Management is to maximize the continuum of care with lifesaving interventions as far forward as possible, in an increasingly lethal battlespace, with reduced infrastructure and logistics. Casualty Prevention includes enhancing warfighter situational awareness and countering threats from disease, battle and non-battle injuries. Healthy and Fit Force efforts preserve health and enhance fitness of ready forces against physical and psychological threats through the continuum of peace and war. Within the Naval Transformation Roadmap, this investment protects the critical "Sea Warrior" component of the overarching "FORCEnet" operating architecture. Additionally, this project supports the transformational capability, Enhanced Sea-borne Positioning of Assets (medical logistics) within "Sea Basing" and the Ship-To-Objective Maneuver capability (expeditionary force medical support) within "Sea Strike".

B. ACCOMPLISHMENTS/PLANED PROGRAM:

	FY 02	FY 03	FY 04	FY 05
Casualty Care and Management	6,359	7,273	5,011	5,230

The goal of Casualty Care and Management is to maximize the continuum of care with lifesaving interventions as far forward as possible, in an increasingly lethal battlespace, with reduced infrastructure and logistics.

FY 2002 ACCOMPLISHMENTS

Initiated:

- Initiated development of a device utilizing high intensity focused ultrasound (HIFU) technology for hemostasis (cauterization of the damaged vessel resulting in the cessation of hemorrhage). The technology included Doppler ultrasound technology for locating and imaging the site of arterial hemorrhage.
- Initiated development of a portable hand-held ultrasound device to be used in far forward situations for diagnostic application by the corpsman in the field. The effort defined system requirements for the use of portable ultrasound, and other medical devices, and supported information technology tools in combat casualty care

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both ashore and afloat.

Continued:

- Continued development of a dressing that controls bleeding (hemostasis) and also incorporates an antimicrobial agent. The use of such a bandage would help lessen the risk of infection.
- Continued evaluation of all Food and Drug Administration (FDA) approved hypertonic crystalloids used in the treatment of hemorrhagic shock. This information will be used in the decision making process to select the most effective fluid manifesting the least adverse profile.
- Continued evaluation of a low volume colloid fluid that has recently gained FDA approval. This fluid will be compared and contrasted to low volume crystalloid resuscitation fluids for efficacy in the treatment of hemorrhage.
- Continued development of novel resuscitation fluids utilizing ketones, rather than lactate, as an energy source. The use of ketones avoids the problem of further elevating lactate levels when lactic acid levels are already excessive as in hemorrhagic shock.
- Continued development of resuscitation fluids containing a novel chemical that promotes oxygen distribution to tissues, thus preventing hypoxic injury to tissues due to hypoperfusion as a result of hemorrhage.
- Continued development of life sustaining drugs that maintain blood flow to vital organs. These drugs, if proven will improve morbidity and decrease mortality in the wounded.
- Continued development of novel oxygen carrying blood substitutes (heme containing peptides, pegylated liposome-encapsulated synthetic hemoglobin, freeze-dried red blood cells) and determine their oxygen carrying capabilities and immunogenic profile. Development of such agents would improve the logistical situation as compared with frozen red blood cells since they could be stored at higher temperatures (e.g., room temperature) and have a longer shelf life.
- Continued testing and evaluation of the shipboard medical grade water system under field conditions. This technology will provide continuous quantities of sterile USP grade water for medical use (e.g., reconstitution of lyophilized drugs and blood products) in a forward area.
- Continued development of the casualty management coordination system that would be integrated with existing forecasting programs that project casualty rates. The new programs will lead to a refinement in estimates and therefore enhance this capability, especially in Operations Other Than War (OOTW) and Operational Maneuvers From the Sea (OMFTS).

Completed:

- Completed development of hollow-fiber frozen red cell glycerolization/deglycerolization system. This system optimized the protocol of this process.
- Completed the investigation of the efficacy and safety of circumferential compression for the emergent management of pelvic ring disruptions by means of a non-invasive pelvic sling. Development of such a device will both stabilize the fracture and limit the extent of hemorrhage resulting from this type of injury.

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FY 2003 PLANS

Initiate

- Initiate a study on the far forward treatment of hemorrhagic shock which will determine the most effective hemostatic agents for the control of life threatening bleeding, determine the optimal method of resuscitation following hemorrhage, and develop equipment and surgical techniques to improve the care of battlefield casualties.

Continue:

- Continue development of a portable hand-held ultrasound device to be used in far forward situations for diagnostic application by the corpsman in the field.
- Continue evaluation of all Food and Drug Administration (FDA) approved hypertonic crystalloids used in the treatment of hemorrhagic shock.
- Continue evaluation of a low volume colloid fluid that has recently gained FDA approval
- Continue development of novel resuscitation fluids utilizing ketones.
- Continue development of resuscitation fluids containing a novel chemical that promotes oxygen distribution to tissues.
- Continue development of a portable hand-held ultrasound device to be used in far forward situations for diagnostic application by the corpsman in the field.
- Continue development of life sustaining drugs that maintain blood flow to vital organs.
- Continue development of novel oxygen carrying blood substitutes.
- Continue development of the casualty management coordination system.

Complete:

- Complete development of a device utilizing high intensity focused ultrasound (HIFU) technology for hemostasis.
- Complete development of a dressing that controls bleeding (hemostasis) and also incorporates an antimicrobial agent.
- Complete testing and evaluation of the shipboard medical grade water system under field conditions.

FY 2004 PLANS

Initiate:

- Initiate clinical trials (Phase I) with trans-sodium crocetin (TSC) in collaboration with Diffusion Pharmaceuticals; this is a joint effort with Army and DARPA.
- Initiate development of casualty management planning tools (software) that will be integrated with existing forecasting programs that project casualty rates & logistical requirements. These programs will enhance/upgrade

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existing programs for Operational Maneuvers from the Sea (OMFTS), Operations Other Than War (OOTW), and Military Operations on Urbanized Terrain (MOUT) scenarios.

Continue:

- Continue a study on the far forward treatment of hemorrhagic shock.
- Continue development of a portable hand-held ultrasound device to be used in far forward situations for diagnostic application by the corpsman in the field.
- Continue evaluation of all Food and Drug Administration (FDA) approved hypertonic crystalloids used in the treatment of hemorrhagic shock.
- Continue evaluation of a low volume colloid fluid that has recently gained FDA approval
- Continue development of novel resuscitation fluids utilizing ketones.
- Continue development of resuscitation fluids containing a novel chemical that promotes oxygen distribution to tissues.
- Continue development of a portable hand-held ultrasound device to be used in far forward situations for diagnostic application by the corpsman in the field.
- Continue development of life sustaining drugs that maintain blood flow to vital organs.
- Continue development of novel oxygen carrying blood substitutes.
- Continue development of the casualty management coordination system.

FY 2005 PLANS

Initiate:

- Initiate development of a new resuscitation fluid for the treatment of hemorrhagic shock based upon studies previously conducted incorporating the most appropriate energy substrate and cytoprotective agents. To be developed jointly with Army and DARPA.

Continue:

- Continue clinical trials (Phase I) with trans-sodium crocetin (TSC) in collaboration with Diffusion Pharmaceuticals LLC; this is a joint effort with Army and DARPA.
- Continue a study on the far forward treatment of hemorrhagic shock.
- Continue development of casualty management planning tools (software) that will be integrated with existing forecasting programs that project casualty rates & logistical requirements. Continue an ACTD with Army on the efficacy of nasal ketamine as an analgesic substitute for morphine.
- Continue development of a portable hand-held ultrasound device to be used in far forward situations for diagnostic application by the corpsman in the field.
- Continue development of life sustaining drugs that maintain blood flow to vital organs.

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- Continue development of novel oxygen carrying blood substitutes.
- Continue development of the casualty management coordination system.

Complete:

- Complete evaluation of all Food and Drug Administration (FDA) approved hypertonic crystalloids used in the treatment of hemorrhagic shock.
- Complete evaluation of a low volume colloid fluid that has recently gained FDA approval.
- Complete development of novel resuscitation fluids utilizing ketones.
- Complete development of resuscitation fluids containing a novel chemical that promotes oxygen distribution to tissues.

	FY 02	FY 03	FY 04	FY 05
Casualty Prevention	5,930	10,078	5,600	6,350

Casualty Prevention includes enhancing warfighter situation awareness and countering threats from disease, battle and non-battle injuries.

FY 2002 Accomplishments

Initiated:

- Initiated development of agile laser eye protection. Advances in laser weapons and systems make development of agile protective systems critical for operations in the new battlespace. To effectively counter the agile laser threat, the device must be capable of responding throughout the visible spectrum to exposures ranging from sub nanosecond pulse to continuous wave. The device must be compatible with life support system, cockpit displays, phosphors and lighting, Night Vision Devices, and chemical biological (CB) protection systems.
- Initiated development of an airborne laser event recorder to operate independently in the cockpit for up to 6 hours and record up to 60 laser exposure events.
- Initiated development of Helicopter Aircrew Integrated Life Support Systems (HAILSS) to improve cooling capability while maintaining optimal CB protection for aircrew. HAILSS will: 1) increase aircrew performance by providing aircraft independent, body-mounted, conditioned air (microclimatic cooling and warmth), 2) provide CB protection, and 3) reduce the number of single components, overall weight and mass of current USN/USMC aircrew ensemble configurations for rotary wing missions. HAILSS technology will be integrated into Tactical Aircrew Integrated Life Support (TAILSS) and to eventual Smart Aircrew Integrated Life Support System (SAILSS) which will incorporate physiologic monitoring.
- Initiated studies for development of an advanced multi-purpose diving system to provide expansion of current diver mission profile in warm and cold water operational environments.

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- Initiated development of a body armor system to protect the terrestrial warrior against conventional and emerging ballistic and thermobaric weapons. Identified unique injury mechanisms from thermobaric weapons (TBW) to assist development of protective strategies against TBW.
- Initiated development of revised standard to reduce behind armor blunt trauma (BABT) in the terrestrial warfighter. Developed instrumentation and modeling of human torso response for non-penetrating ballistic impact from small arms fire and incorporate into thoracic models to: 1) simulate BABT, 2) model dynamic tissue deformation and 3) develop thoracic accelerometry (rib), intrathoracic pressure, intracranial (subarachnoid) pressure and validate simulated model. Developed revised standard to improve individual soldier protection gear to improve protection against conventional and emerging ballistic threats.
- Initiated development of Advanced Personal Environmental Control System to permit the warfighter extended operational time in hot climates using micro-cooling technology.
- Initiated development of a smart firefighter ensemble with embedded physiological sensors, individual computer, data capture, storage, interpretation, and telemetry, for both shipboard and terrestrial operations.
- Initiated development of rapid, noninvasive diagnostic for anthrax immunization and tuberculosis (TB) from saliva to permit rapid assessment of anthrax immune status and resistance to TB prior to deployment. Developed hand held rapid fluorescence polarization assay and device for rapid assessment in the field.

Completed:

- Completed efforts to enhance maintenance of spatial orientation to provide an integrated visually powerful cockpit/Helmet-Mounted Display (HMD) environment that can reduce or eliminate loss of Situational Awareness, overcome Spatial Disorientation, and allow the aviator to process information more rapidly.

FY 2003 PLANS

Continue:

- Continue development of agile laser eye protection.
- Continue development of airborne laser event recorder to operate independently in the cockpit for up to 6 hours and record up to 60 laser exposure events.
- Continue development of Helicopter Aircrew Integrated Life Support Systems (HAILSS) to improve cooling capability while maintaining optimal CB protection for aircrew.
- Continue studies for development of an advanced multi-purpose diving system to provide expansion of current diver mission profile in warm and cold water operational environments.
- Continue development of a body armor system to protect the terrestrial warrior against conventional and emerging ballistic and thermobaric weapons.
- Continue development of Advanced Personal Environmental Control System to permit the warfighter extended

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operational time in hot climates using micro-cooling technology.

- Continue development of a smart firefighter ensemble with embedded physiological sensors, individual computer, data capture, storage, interpretation, and telemetry, for both shipboard and terrestrial operations.
- Continue development of rapid, noninvasive diagnostic for anthrax immunization and tuberculosis (TB) from saliva to permit rapid assessment of anthrax immune status and resistance to TB prior to deployment.

Complete:

- Complete development of revised standard to reduce behind armor blunt trauma (BABT) in the terrestrial warfighter.

FY 2004 PLANS

Continue:

- Continue development of agile laser eye protection.
- Continue development of airborne laser event recorder to operate independently in the cockpit for up to 6 hours and record up to 60 laser exposure events.
- Continue development of Helicopter Aircrew Integrated Life Support Systems (HAILSS) to improve cooling capability while maintaining optimal CB protection for aircrew.
- Continue studies for development of an advanced multi-purpose diving system to provide expansion of current diver mission profile in warm and cold water operational environments.
- Continue development of a body armor system to protect the terrestrial warrior against conventional and emerging ballistic and thermobaric weapons.
- Continue development of Advanced Personal Environmental Control System to permit the warfighter extended operational time in hot climates using micro-cooling technology.
- Continue development of a smart firefighter ensemble with embedded physiological sensors, individual computer, data capture, storage, interpretation, and telemetry, for both shipboard and terrestrial operations.
- Continue development of rapid, noninvasive diagnostic for anthrax immunization and tuberculosis (TB) from saliva to permit rapid assessment of anthrax immune status and resistance to TB prior to deployment.

Complete:

- Complete development of a body armor system to protect the terrestrial warrior against conventional and emerging ballistic and thermobaric weapons.

FY 2005 PLANS

Continue:

- Continue development of Helicopter Aircrew Integrated Life Support Systems (HAILSS) to improve cooling capability

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Protection Advanced Technology

while maintaining optimal CB protection for aircrew.

- Continue development of rapid, noninvasive diagnostic for anthrax immunization and tuberculosis (TB) from saliva to permit rapid assessment of anthrax immune status and resistance to TB prior to deployment.

Complete:

- Complete development of airborne laser event recorder to operate independently in the cockpit for up to 6 hours and record up to 60 laser exposure events. Transition to Naval Air Systems Command.
- Complete development of agile laser eye protection. Transition to Naval Air Systems Command.
- Complete studies for development of an advanced multi-purpose diving system to provide expansion of current diver mission profile in warm and cold water operational environments. Transition to NAVSEA 00C.
- Complete development of Advanced Personal Environmental Control System to permit the warfighter extended operational time in hot climates using micro-cooling technology.
- Complete development of a smart firefighter ensemble with embedded physiological sensors, individual computer, data capture, storage, interpretation, and telemetry, for both shipboard and terrestrial operations. Transition to NAVSEA, PEO SEA 05.

	FY 02	FY 03	FY 04	FY 05
Healthy and Fit Force	915	1,269	824	782

Healthy and Fit Force efforts preserve health and enhance fitness of ready forces against physical and psychological threats through the continuum of peace and war.

FY 2002 ACCOMPLISHMENTS

Initiated:

- Initiated development of affordable, reliable, easy-to-use hearing protection that allows aviation personnel safe extended exposures of up to 150 dB.
- Initiated effort to determine the human/neck injury tolerance to aircraft maneuvering acceleration. This effort will enhance mission effectiveness by minimizing injury, reducing medical rehabilitation costs, and reducing a need for aircrew replacement training.
- Initiated effort to prevent injury to Special Operations personnel using fast boats by developing seat shock mitigation system for small Fast Boats.

Continued:

- Continued the treatment and prevention of noise-induced hearing loss using antioxidants. Utilized a multi-tiered approach to increase resistance to damage and enhance repair after injury. Utilized safe therapeutics already approved by FDA for protection and rescue and develop inner ear drug delivery system.

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FY 2003 PLANS

Continue:

- Continue development of affordable, reliable, easy-to-use hearing protection that allows aviation personnel safe extended exposures of up to 150 dB.
- Continue effort to determine the human/neck injury tolerance to aircraft maneuvering acceleration.
- Continue effort to prevent injury to Special Operations personnel using fast boats by developing seat shock mitigation system for small Fast Boats.
- Continue the treatment and prevention of noise-induced hearing loss using antioxidants.

FY 2004 PLANS

Continue:

- Continue development of affordable, reliable, easy-to-use hearing protection that allows aviation personnel safe extended exposures of up to 150 dB.
- Continue effort to determine the human/neck injury tolerance to aircraft maneuvering acceleration.
- Continue effort to prevent injury to Special Operations personnel using fast boats by developing seat shock mitigation system for small Fast Boats.
- Continue the treatment and prevention of noise-induced hearing loss using antioxidants.

FY 2005 PLANS

Continue:

- Continue effort to determine the human/neck injury tolerance to aircraft maneuvering acceleration.
- Continue effort to prevent injury to Special Operations personnel using fast boats by developing seat shock mitigation system for small Fast Boats.
- Continue the treatment and prevention of noise-induced hearing loss using antioxidants.

Complete:

- Complete development of affordable, reliable, easy-to-use hearing protection that allows aviation personnel safe extended exposures of up to 150 dB.

C. OTHER PROGRAM FUNDING SUMMARY

RELATED RDT&E:

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NAVY RELATED RDT&E:

PE 0601153N Defense Research Sciences
PE 0602235N Common Picture Applied Research
PE 0602236N Warfighter Sustainment Applied Research
PE 0603236N Warfighter Sustainment Advanced Technology
PE 0604771N Medical Development

NON-NAVY RELATED RDT&E:

PE 0602716A Human Factors Engineering Technology
PE 0602785A Manpower, Personnel and Training Technology
PE 0602787A Medical Technology
PE 0603002A Medical Advanced Technology
PE 0602202F Human Effectiveness Applied Research
PE 0603231F Crew Systems and Personnel Protection Technology

D. ACQUISITION STRATEGY: Not applicable.

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Project Number: Various
Project Title: Congressional
Plus-ups

CONGRESSIONAL PLUS-UPS:

R2494	FY 02	FY 03
Center For Disaster Management	2,113	0

Provided support to U.S. Southern Command (USSOUTHCOM) by researching issues related to natural and man-made disasters in the Latin American and Caribbean area of responsibility. Effort included the prevention or mitigation of causative or contributing factors, and the humanitarian response to those disasters.

R2715	FY 02	FY 03
Distributed Simulation Warfighting Concepts	4,951	3,325

Examines the warfighting and weapon system design concepts and their relationship to future aircraft carrier designs.

R9030	FY 02	FY 03
Organ Transfer Technology	1,921	2,933

Pre-clinical and clinical investigations directed at demonstrating the induction of tolerance to transplanted foreign tissues in the recipient through use of certain immunological reagents. This technology will allow treating a patient at the time of transplant with certain immune reagents that will cause the transplanted tissue/organ to be accepted as "self" by the host immune system. If the technology is effective, the patient would not require subsequent immunosuppressive drug therapy, in contrast to the currently required life-long immunosuppressive drug therapy, nor would the patient's immune system be impaired

R9031	FY 02	FY 03
Damage Control Operational Concepts-Distributed Damage	1,633	0

Supported Damage Control Operations through the development and demonstration of a brassboard prototype of the Prognostics Framework (PF) approach to supplement, enhance and improve the Automated Hull Damage and Stability Monitoring System (AHDSMS). The enhanced AHDSMS provided visibility of real-time assessment of ship hull damage and compartment flooding which allowed for optimization and prioritization of flooding control and stability response strategies. The brassboard demonstration considered technologies demonstrated on the ex-USS Shadwell.

R9161	FY 02	FY 03
Medical Data Mining Tool	0	5,281

Initiate development of Medical Data Mining Tools designed to enhance the medical common operational picture. The Medical Data Mining Tool (MDMT) Project will advance Navy medical surveillance capability through the development of a

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Project Title: Congressional
Plus-ups

system that integrates the Medical Data Surveillance System (MDSS) with the DoD Health Care enterprise system, Theater Medical Information Project (TMIP).

R9162	FY 02	FY 03
Navy Medical System Configuration and Testbed	0	7,922

Initiate the Navy Medical System Configuration and Test Bed (N-MSCTB) project. This project establishes a capability for expediting the delivery of emerging technologies from Navy Medical R&D to DoD healthcare. The Naval Health Research Center has developed and identified several technology concepts to enhance force health protection. These concepts require further development and systems integration prior to actual field-testing

R9163	FY 02	FY 03
Portable Sterile Water Production Device	0	977

Advanced testing of a lightweight, man-portable, disposable device for producing water suitable for injection from potable water in the field.

R2333	FY 02	FY 03
Rural Health	*	0

This program supported remote medical education, training and telemedicine in rural America. (*Appropriated in FY02 in PE 0603706N, \$6,532)

R2334	FY 02	FY 03
Bone Marrow Program	*	0

Supported the National Marrow Program/Registry, funding research associated with transplantation. (*Appropriated in FY02 in PE 0603706N, \$27,825)

R2492	FY 02	FY 03
Medical Readiness Telemedicine Initiative Follow-On	*	0

Funds supported Navy Participation in the Joint Medical Operations (Telemedicine) Advanced Concepts Demonstration (ACTD). This ACTD is aimed at changing business practices in the delivery of medical services during warfare. (*Appropriated in FY02 in PE 0603706N, \$7,397)

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R2714	FY 02	FY 03
Teleradiology	*	0

A collaborative research effort between the Uniformed Services University of the Health Sciences, the National Naval Medical Center, and the University of South Florida in computer aided diagnostics and digital x-ray imaging to develop advanced applications in digital mammography and telemammography. (*Appropriated in FY02 in PE 0603706N, \$961)

R2834	FY 02	FY 03
Robot Eyes	*	0

Integrated an existing optical sensing system with various devices, to include prosthetic devices, that have the capability to perform delicate tasks requiring precision manipulative skills. (*Appropriated in FY02 in PE 0603706N, \$2,401)

R2836	FY 02	FY 03
Vector Vaccine	*	0

Funds addressed delivery methods for DNA vaccines, per vaccine program between industry and the Naval Medical Research Center. (*Appropriated in FY02 in PE 0603706N, \$961)

R9000	FY 02	FY 03
Nursing Telehealth Applications	*	0

An international effort by a consortium of military medical technicians, educators, researchers, and domestic rural health care providers to design and deliver a nurse training curriculum to remote international locations with special emphasis on emergency medical training and humanitarian relief. (*Appropriated in FY02 in PE 0603706N, \$2,501)

R9001	FY 02	FY 03
Mobile Integrated Diagnosis and Data Analysis System (MIDDAS)	*	0

Support for the Mobile Integrated Diagnosis and Data Analysis System was provided to complete the transition to a fully integrated and functional field demonstration unit. (*Appropriated in FY02 in PE 0603706N, \$963)

R9002	FY 02	FY 03
Minimally Invasive Surgical Technology Institute	*	0

Support provided for the Minimally Invasive Surgical Technology Institute to develop various minimally and non-invasive monitoring and video-assisted medical techniques. (*Appropriated in FY02 in PE 0603706N, \$961)

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 3 PROGRAM ELEMENT: 0603729N
PROGRAM ELEMENT TITLE: Warfighter Protection Advanced
Technology

Project Number: Various
Project Title: Congressional
Plus-ups

R9003	FY 02	FY 03
Biomedical Research Imaging Core - COH National Medical Center	*	0

Funds supported the Biomedical Research Imaging Core to advance the understanding of breast and prostate cancer and other diseases requiring the use of bone marrow transplantation. (*Appropriated in FY02 in PE 0603706N, \$3,843)

R9004	FY 02	FY 03
Portable Production of Sterile Water for Intravenous	*	0

Funds provided for the improvement of an existing light-weight, man-portable, disposable device to produce suitable water for injection, while in the field, from potable field water. (*Appropriated in FY02 in PE 0603706N, \$961)

R9005	FY 02	FY 03
Community Hospital Telehealth Consortium	*	0

Support for the Community Hospital Telehealth Consortium, a community-based healthcare service project organized around 6 not-for-profit community hospitals. (*Appropriated in FY02 in PE 0603706N, \$1,442)

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