

UNCLASSIFIED

FY 2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2004

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0933 Medical / Dental Equipment Development	6,795	5,570	6,101	6,281	7,584	7,737	7,893	Continue	Continue
M2333 Rural Health	5,641	6,724	0	0	0	0	0	0	12,365
M2334 Bone Marrow Research	27,634	27,688	0	0	0	0	0	0	55,322
M2494 Center for Disaster Management & Humanitarian Assistance	2,904	0	0	0	0	0	0	0	2,904
M2650 Voice Instructional Devices (VID)	0	0	0	0	0	0	0	0	5,821
M2795 Coastal Cancer Control	4,392	3,461	0	0	0	0	0	0	11,249
M2836 Vectored Vaccine Research Program	1,464	1,483	0	0	0	0	0	0	2,947
M2896 Military Dental Research	2,880	1,187	0	0	0	0	0	0	6,828
M2897 High Resolution Digital Mammography	0	0	0	0	0	0	0	0	1,443
M9002 Minimally Invasive Surgical Technology Institute	1,172	989	0	0	0	0	0	0	2,161

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M9003	Biomedical Research Imaging - COH National Medical Center								
	3,417	2,967	0	0	0	0	0	0	6,384
M9005	Community Hospital Telehealth Consortium								
	975	0	0	0	0	0	0	0	975
M9083	Naval Blood Research Lab								
	1,464	0	0	0	0	0	0	0	1,464
M9246	Treatment of Radiation Sickness Research								
	0	0	0	0	0	0	0	0	0
M9247	Institute of Technology Biomedical R&D Complex								
	975	0	0	0	0	0	0	0	975
M9248	National Center for Collaboration in Medical M&S								
	2,196	0	0	0	0	0	0	0	2,196
M9249	Low Cost Retractable Needle and Safety Syringe								
	975	989	0	0	0	0	0	0	1,964
M9231	Medical Procedures Reference Tool (MPRT)								
	2,537	2,521	0	0	0	0	0	0	5,058
M9396	Applied Cognitive Science Technologies								
	0	989	0	0	0	0	0	0	989
M9397	Discovery, Early, Detection, Evaluation, Treatment and Prevention								
	0	5,883	0	0	0	0	0	0	5,883
M9398	Distress Streamer Signaling System								
	0	2,942	0	0	0	0	0	0	2,942
M9399	Health Query and Analysis System								
		1,978	0	0	0	0	0	0	1,978
M9401	Hemoglobin-Based Oxygen Carrier								

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	0	4,945	0	0	0	0	0	0	4,975
Total	65,421	70,316	6,101	6,281	7,584	7,737	7,893	Continue	Continue

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

PROGRAM CHANGE FOR TOTAL PE:

		<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>				
(U) FY 2004 President's Budget		2,654	5,593	9,351				
(U) Adjustments from PRESBUDG:								
2333 - Rural Health		5,780	6,800					
2334 - National Bone Marrow Program		28,900	28,000					
2494 - Center for Disaster Management		2,975	3,500					
2650 - Voice Instructional Device (VID)								
2795 - Coastal Cancer Center		4,500						
2836 - Vectored Vaccine Research		1,500	1,500					
2896 - Military Dental Research		3,000	1,200					
2897 - High Resolution Digital Mammography								
9002 - Minimally Invasive Surgical Technology		1,200	1,000					
9003 - Biomedical Research Imaging - COH Center		3,500	3,000					

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9005 - Community Hospital Telehealth Consortium		1,000						
9082 - Sonarman Earcup Technology								
9083 - Naval Blood Research Laboratory		1,500						
9084 - Naval Medical Rsch Ctr Radiation Treatment								
9246 - Treatment of Radiation Sickness Research		3,400						
9247 - Institute of Technology Biomedical R&D		1,000						
9248 - National Cntr for Collaboration in Med M&S		2,250						
9249 - Low Cost Retract Needle and Safety Syringe		1,000	1,000					
9251 - Medical Procedures Reference Tool (MPRT)		2,600	2,550					
9396 - Applied Cognitive Science Technologies			1,000					
9397 - Discovery, Early Detection, Evaluation			5,950					
9398 - Distress Streamer Signaling System			2,975					
9399 - Health Query and Analysis System			2,000					
9401- Hemoglobin-Based Oxygen Carrier			5,000					
Business Process Reform (Sec. 813)		-285						
Economic Assumptions (Sec. 813)		-400						
FY 2002 SBIR (dtd 5-15-02)								
FY 2003 BTR Balancer for Emergency		81						
FY 2003 SBIR 5 May 03		-947						
Inflation Savings		-756						
IT Cost Growth (Sec. 8109)		-131						
FY03 Rescission (Radiation Treatment Sickness)		-3,400						
PPBS Baseline Adjustment		4,500						
Sec. 313 PL 107-206 Revised								
Sec. 8123 Management Reform								
Sec. 8094: Management Improvement			-179					
Sec. 8126: Efficiencies/Rev			-573					

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Inflation				-18				
Non - purchase inflation				-3				
Technical Adjustments				-2,383				
RD TEN Balancing				-5				
(U) FY 2005 President's Budget		65,421	70,316	6,942				

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(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2003 ACCOMPLISHMENTS:

- (U) (721) TACTICAL MEDICAL COORDINATION SYSTEM: Completed project. Real-world Beta test of over 400 casualties conducted while system was deployed to Iraq with Fleet Hospital Three. Size and weight of hand-held unit reduced to 12 ounces, a Windows CE operating system has been added to replace the former, proprietary operating system, and GPS capability has been added.
- (U) (383) SOF MISSION RELATED PERFORMANCE MEASURES SYSTEM: Completed project. Four systems tested by SEAL Team and SEAL Delivery Team Personnel and recommendations from those tests incorporated into the system.

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- (U) (258) UNDERWATER AND DIVE STATION WORK SITE NOISE SURVEYS: Completed project. System fielded with dive teams for collection of data that are being analyzed to determine total sound exposure at a working dive site for inclusion into guidance for diver hearing conservation.
- (U) (292) SEA TRIALS OF NEW SUBMARINE WATCHSTANDING SCHEDULE: Completed project. Data collected regarding effectiveness of revised underway watchstanding schedule on subjective submariner performance and the effect of the schedule on hormone levels that indicate normal circadian function.
- (U) (1,282) TACTILE SITUATIONAL AWARENESS SYSTEM: Completed project. Final phase of rotary wing testing completed.
- (U) (132) COMPUTER ASSISTED MANAGEMENT OF FIELD DENTAL EMERGENCIES: Completed project. Beta testing of software prototype completed and suggested modifications incorporated into the system.
- (U) (198) DIVER COOLING SYSTEM FOR PERSONAL PROTECTIVE EQUIPMENT USED IN CONTAMINATED WATER DIVING: Initiated and completed project to evaluate commercially available cooling systems for use under protective equipment worn during diving operations in warm, contaminated water.
- (U) (277) USING ESP TO VALIDATE FLEET MARINE FORCE MEDICAL RESOURCE REQUIREMENTS: Initiated project to validate FMF medical resource requirements. During the first year of funding, relevant casualty streams for ground operations were identified, programs were written to access the Estimating Supplies Program databases and calculate sustainment requirements, and the first responder, Battalion Aid Station, Shock Trauma Platoon, Forward Resuscitative Surgical System and Surgical Company functional area requirements were completed.
- (U) (162) ADVANCED ELECTRONIC STETHOSCOPE FOR GENERAL FIELD USE: Completed final field test of performance and analyzed data for evaluation of the noise reduction stethoscope.
- (U) (1,062) MEDICAL DATA SURVEILLANCE AND NAVAL WATCHBOARD THREAT ALERT INTERFACE: Completed integration of medical data surveillance capability into the naval watchboard threat alert interface.
- (U) (165) LONG RANGE RAID CASUALTY EVACUATION: Completed analysis of requirements for long range casualty evacuation and en route care based on emerging Marine Corps doctrine and concepts. Advanced development of strategies to provide care to casualties during prolonged evacuation
- (U) (80) HYPERBARIC PDA: Completed incorporation of submarine escape guidance software onto Personal Digital Assistant devices and field testing of the devices.

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- (U) (672) ESP / JMEDSAF: Initiated evaluation of models to predict supply requirements and systems to provide enhanced medical situational awareness in the battlespace.
- (U) (44) DEPLOYED SEABEE WOMEN'S GYNECOLOGIC HEALTH PROJECT: Initiated and completed field test for reliability and user satisfaction of a kit to self-diagnose vaginal and urinary tract infections.
- (U) (672) TACTICAL MEDICAL LOGISTICS PLANNING TOOL: Initiated and completed field testing of Software that will simulate the flow of patients through the medical treatment system and estimate medical resources and logistical requirements.
- (U) (395) DENTAL ADAL (OPERATIVE FIELD DENTISTRY): Initiated analysis of the operative field dentistry ADAL (ADAL 662). Field testing of dental equipment intended for use in Marine Corps units during deployments and operations.

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2. (U) FY 2004 PLAN:

- (U) (318) USING ESP TO VALIDATE FLEET MARINE FORCE MEDICAL RESOURCE REQUIREMENTS: Continuation of project to validate FMF medical resource requirements.
- (U) (512) OPERATIVE FIELD DENTISTRY: Continuation of the analysis of components of the operative field dentistry ADAL (ADAL 662).
- (U) (1,972) RESTORING EFFECTIVE SURVIVAL IN SHOCK: Initiation of clinical trials of a hemoglobin-based oxygen carrier in hemorrhagic shock.
- (U) (167) FAR FORWARD DENTAL INTERIM RESTORATIVE MATERIAL: Initiate and complete studies to evaluate the effectiveness of interim restorative materials for possible use by non-dental medical personnel in the forward treatment of dental emergencies.
- (U) (589) IMPROVED SIMULATION OF MEDICAL CARE DELIVERY FOR NAVY OPERATIONS: Initiate and complete project to improve modeling and simulation of medical care delivery.
- (U) (275) TEST AND EVALUATION OF THE SUBMARINE ATTRITION RISK SCALE: Initiate test and evaluation of a psychological testing instrument to identify submarine school students who are at risk for separation from the Navy.
- (U) (808) TREATMENT OF ACUTE ACOUSTIC TRAUMA: Initiate test and evaluation of a treatment to reverse the cellular damage that results in hearing loss following exposure to high noise levels.
- (U) (786) SHIPBOARD MEDICAL ADMINISTRATIVE READINESS TRACKING TOOL: Initiation and completion of studies to assess the ability of the program to aggregate individual and group medical readiness information to provide automated views of current state and future state readiness.
- (U) (143) EQUIPMENT TESTING IN HYPERBARIC CHAMBERS: Initiation and completion of tests of medical equipment exposed to hyperbaric conditions for certification on the authorized for Navy use list (ANU).

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3. (U) FY 2005 PLAN:

- (U) (1,986) RESTORING EFFECTIVE SURVIVAL IN SHOCK: Continuation of clinical trials of a hemoglobin-based oxygen carrier in hemorrhagic shock.
- (U) (416) TEST AND EVALUATION OF THE SUBMARINE ATTRITION RISK SCALE: Continue test and evaluation of a psychological testing instrument to identify submarine school students who are at risk for separation from the Navy.
- (U) (680) TREATMENT OF ACUTE ACOUSTIC TRAUMA: Continue test and evaluation of a treatment to reverse the cellular damage that results in hearing loss following exposure to high noise levels.
- (U) (441) OPERATIVE FIELD DENTISTRY: Continuation of the analysis of components of the operative field dentistry ADAL (ADAL 662).
- (U) (1,368) ENHANCED OXYGEN DELIVERY WITH TRANS-SODIUM CROCETINATE: Initiate clinical evaluation of a compound to enhance the delivery of oxygen to cells as a treatment for hemorrhagic shock.
- (U) (1,210) IMPROVED PRESSURE DRESSINGS FOR PENETRATING WOUNDS: Initiate trials of an improved pressure dressing that will help stop bleeding in penetrating wounds.

B. (U) PROGRAM CHANGE SUMMARY: See Program Change for PE

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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