

Fig. 1. Median HPM costs per eligible employee for all survey participants. Reprinted with permission from the *American Journal of Health Promotion*.

each organization's data coordinator for final clarification.

After this series of validity checks, a determination was made as to which reported data were sufficiently credible and within acceptable range and could therefore be pooled for the purpose of establishing benchmarks. For most measures, reasonable minimum and maximum values were identified and 25th percentiles, medians, and 75th percentiles were calculated.

When reporting most aggregate metrics, the median values were used (rather than averages). This was done to minimize the effects of extreme (very high or very low) values and to prevent the results from being dominated by participants with the largest number of employees.

Once the data were analyzed, a potential HPM opportunity for improvement was calculated based on a comparison of the organization's actual performance level for a given program metric as compared with the best-practice level, which was operationally defined as the 25th percentile value for all respondents. If an organization's performance relative to a given metric was at or more favorable than the best-practice (25th percentile) level, it was designated as a best-practice organization.

### Study Sample

Forty-three employers participated in the 1999/2000 benchmarking study by contributing their HPM data to the database. (A list of participating organizations is available on request.) The represented industries included communications ( $n = 5$ ); electronics and computers ( $n = 2$ ); finance and insurance ( $n = 4$ ); government and education ( $n = 10$ ); manufacturing ( $n = 8$ ); mining, oil, and gas ( $n = 2$ ); pharmaceutical ( $n = 2$ ); retail trade ( $n = 2$ ); services, transportation, and utilities ( $n = 1$  for each); and other ( $n = 5$ ). Approximately 950,000 workers were employed by the participating organizations. Almost half (48%) were salaried and the rest (52%) were hourly workers. Their average age was 42 years and the percentages of women and men were 36 and 64, respectively. Employers were well distributed nationally, with their three largest employee concentrations in 26 states. Employee job classification categories were also well distributed: professional (24%), laborers (23%), managers (19%), clerical (13%), services (6%), technicians (5%), and other (10%).

## Results

### Quantitative Phase

**Overall HPM expenditures.** For the calendar year 1998, the median total HPM cost per employee per year was \$9992. These dollars included HPM costs for five core program categories: group health, turnover, unscheduled absence, non-occupational disability, and workers' compensation. Group health costs constituted the largest proportion of total HPM costs (\$4666, or 47%), followed by turnover (\$3693, or 37%), unscheduled absence (\$810, or 8%), non-occupational disability (\$513, or 5%) and workers' compensation (\$310, or 3%) (Fig. 1). When other programmatic areas such as EAPs, health promotion, occupational medicine, safety, and work/life were added, total HPM costs increased to \$10,365 per employee.

The potential cost savings across the five core HPM program areas was estimated to be \$2562 per employee per year, or 26% of the median total HPM costs. The potential savings were calculated as the sum of the differences between the median HPM costs for benchmarking participants and the best-practice levels (ie, 25th percentile) for core HPM program areas.

**Program-specific HPM expenditures.** Table 1 summarizes the data for each of the core program areas examined in the study. Reported in the table are the minimum, maximum, 25th, 50th, and 75th percentile values for key utilization and cost measures.

Not shown in the table are results from the sub-analyses performed by program area. For example, in the area of group health, participant costs were highest for indemnity plans (\$4690 per eligible employee) and lowest for HMO plans (\$3946 per eligible employee). The median cost per employee for non-occupational short-term and long-term disability programs were \$370 and \$133, respectively. For workers' compensation, the median cost per em-

**TABLE 1**  
Key Utilization and Cost Measures Collected From HPM Benchmark Study Participants, by Category—1998 Data

HPM Program Categories	Min	Max	Percentiles		
			25	50	75
Group health \$/eligible	\$3,127	\$ 6,421	\$4,049	\$4,666	\$4,878
Non-occup disab \$/eligible	\$ 225	\$ 1,084	\$ 370	\$ 513	\$ 682
Work comp \$/eligible	\$ 93	\$ 863	\$ 190	\$ 310	\$ 505
Unscheduled absence \$/eligible	\$ 131	\$ 1,864	\$ 375	\$ 810	\$1,207
Unscheduled \$/eligible, hourly	\$ 137	\$ 859	\$ 312	\$ 442	\$ 510
Unscheduled \$/eligible, salaried	\$ 308	\$ 1,337	\$ 440	\$ 868	\$1,272
Total absence rate	0.18	3.95	0.76	1.72	2.84
Absence rate, hourly	0.43	7.25	0.92	1.02	1.92
Absence rate, salaried	0.60	2.08	0.71	1.32	1.94
Total turnover \$/eligible	\$1,826	\$10,317	\$2,446	\$3,593	\$6,284
Turnover \$/eligible, hourly	\$ 848	\$ 7,986	\$2,147	\$2,595	\$3,929
Turnover \$/eligible, salaried	\$1,884	\$16,241	\$3,344	\$5,240	\$6,887
Total turnover rate	2.21	46.01	6.18	8.54	15.26
Turnover rate, hourly	5.54	64.52	10.83	17.83	25.64
Turnover rate, salaried	2.23	30.63	5.79	9.29	10.39

ployee was \$310. Participants reported that their employees were absent from work (for unscheduled or "incidental" absence) on 1.7% of scheduled workdays. The median cost for these absences was estimated to be \$810 per employee per year.

Across all employee groups, the annual turnover rate ranged from 2.2% to 46.0%. We adjusted turnover rates on the basis of the percentage of vacated positions each organization intended to fill. Then, using estimates of turnover costs obtained from a review of the literature, we calculated turnover costs for each organization. (Turnover cost estimates for hourly employees were derived from *Business and Health*, April 1998, p.10, and for salaried employees from *Workforce Magazine*, August 1997, p. 50.)

Turnover costs for hourly and salaried workers were estimated at 50% and 100% of annual base compensation, respectively. Turnover costs included expenses related to recruitment efforts, lost productivity while searching for replacement workers, and reduced productivity for new employees who require training and guidance to achieve performance levels that match those of former workers. Using these figures, the costs per employee related to turnover ranged from \$1826 to \$10,317.

### Qualitative Phase

In 1998, site visits to best-practice HPM employers resulted in the formulation of 10 themes that were common to most of the organizations visited, as summarized below:

1. *There was an alignment between HPM and the overall business strategy of the organization.* HPM team members recognized that the main business purpose of their organization was to deliver products and services that are competitive in the market. The HPM team's role was to support the organization's primary mission by acting as a strategic partner to help the organization attain its business objectives.

2. *There was an interdisciplinary team focus.* During site visits, best-practice companies brought together staff from many diverse functional areas, such as human resources, employee benefits, risk management, employee assistance, safety, legal, labor relations, disability management, medical-occupational health, employee relations, work/life, attendance management, health promotion, quality, and security. These individuals worked cooperatively across their companies' territories, "silos," and "fiefdoms" to achieve common HPM and organizational goals.

In most cases, HPM teams decided that a top-heavy infrastructure was not always necessary. Although some companies restructured to create a formal interdisciplinary HPM group, many more experienced internal obstacles that kept HPM-related components apart from one another. Nonetheless, managers collaborated with one another despite organizational barriers that may otherwise have set them apart. Department or function leaders did not need to be convinced that there was a need for an interdisciplinary approach; they were already sold on this concept.

3. *There was a champion or a team of champions.* At each meeting, it was evident that one person or a group of key individuals drove the process and championed the HPM vision at all levels of the organization. These individuals exhibited the determination to make things happen and an overwhelming sense of purpose and passion about HPM.

4. *Senior management and business operations were key members of the team.* Although in many cases, an HPM approach developed as a grass-roots initiative, senior management and operations leaders quickly became engaged. They recognized that an HPM model needed to be supported by senior management and throughout business operations. At

companies with successful HPM programs, the links to finance and funding sources were apparent. Senior management, business operations, and the HPM team worked hand-in-hand with an appreciation of the other's contribution to the process.

5. *Prevention, health promotion, and wellness staff were heavily engaged in the process.* These individuals believed in and practiced healthy lifestyles, employee empowerment, and self-responsibility. They advocated the establishment of a "healthy company" culture. Health promotion leaders, and their supporters in medical and occupational health departments, were able to clearly articulate the link between employee health and wellness and the productivity of the organization as a whole. They drove the research and outcome studies that documented the relationship between health and productivity for their organization.

6. *The emphasis was on quality-of-life improvement, not just cost cutting.* Repeatedly, managers talked about improving organizational processes and "doing the right thing" for their employees. There was an expectation that if an organization improved the quality of work life, productivity would also improve and cost containment would be a natural consequence. The HPM team focused not only on managing the 20% of employees who consumed most of the program resources, but also on attending to the needs of the other 80%, whose health and well-being influenced their work:

7. *Data, measurement, reporting, evaluation, and return on investment studies became increasingly important over time.* Although high costs may drive the initial HPM initiative, in most instances evaluation protocols and elaborate data-reporting systems are not prepared ahead of time. The philosophy of the HPM team seemed to be "just do it, and develop the ability to evaluate results later." Leaders decided to launch projects that were likely to quickly

improve efficiency, quality, and cost. Once actions were taken, these organizations realized that they needed to show quantitative results and develop systems for the ongoing monitoring and tracking of progress.

Data and reporting systems were developed with three main purposes in mind: (1) to highlight areas for potential intervention and improvement so that priorities could be set and the potential for savings could be quantified; (2) to provide ongoing reporting and data monitoring to the business units to hold them accountable for improved performance; and (3) to evaluate outcomes, return on investment, and potential areas for further investment.

8. *Communication was constant and was directed throughout the organization.* HPM leaders realized that they needed to keep their activities on the front burner for all constituents. They needed to communicate purpose, tactics, and results to fellow team members, business operations, the front line, and senior management. The packaging of information was critical. It needed to be organized in such a way that the target audience would understand and apply the information. The audience needed to see the purpose of HPM initiatives and realize that positive results were central to business success.

9. *There was a constant need to improve by learning from others.* To remain on the leading edge, these best-practice organizations strove to learn new ideas and approaches from others through a variety of techniques, including benchmarking. They also felt comfortable in openly sharing their experience and stories with others as a way of teaching and coaching. There was little guardedness or embarrassment about failures or mistakes; some felt they often learned more from failures than from successes. These organizations were proud of their accomplishments and enjoyed the spotlight that uncovered both their achievements and unsuccessful risk-taking initiatives.

10. *The team was having fun.* HPM team members appeared to be excited, enthusiastic, and motivated by their work. The atmosphere during the meeting was one of positive energy, and ample opportunities were available for introducing humor and good-natured challenges to fellow team members.

## Discussion

As used here, benchmarking is the process of identifying, understanding, and adapting outstanding practices from best-practice organizations to help other organizations improve their performance. Employers participating in benchmarking activities report breakthrough improvements that result in cost control, improved quality, and enhanced profitability. Rarely have programs that focused on health, disability, absence, and turnover been associated with the achievement of these corporate objectives. However, there is an increasing awareness that these programs may play a significant role in achieving improved organizational productivity and, for commercial enterprises, increased profitability.

A first step in establishing the link between health and productivity is determining which baseline measures are central, germane, and likely to be broadly accepted by the employer community. In response to an identified need, the Consortium Benchmarking Study designers initiated a broad assessment of employer health and productivity measures. A central objective of this effort was to expand the way in which most employers traditionally viewed their health and human resource programs and related costs—one program or department at a time. We aggressively sought to include a variety of areas related to health and productivity that are commonly viewed as cost centers within an organization. Using common-denominator metrics, we combined a variety of HPM program experiences into a total organiza-

tional view and repositioned the costs for these programs as corporate investments in the health and productivity of the workforce. The challenge to the study designers was to develop a finite but meaningful set of measures, ensure that data collected for these measures were credible and consistently reported across the participants, and present results that could be used as a catalyst for action.

One key exhibit in the report uses a single dollar bill icon to depict an apples-to-apples comparison of costs across core HPM programs. The total aggregate amount represented by the dollar bill can be used to effectively communicate to senior management the considerable sums already invested in HPM programs. From that point, it is a small jump to the idea that better coordination and management of these programs could reduce costs and enhance health, productivity, and quality of work life. By highlighting areas for improved coordination across programs, it becomes apparent that such an integrated approach is not only theoretical but also practical. The qualitative study findings further highlight how specific companies were implementing HPM models and the success that they were able to achieve.

For the 1999/2000 study sample of 43 employers, annual costs were \$9992 per employee for their core HPM programs that included group health benefits, absence, non-occupational disability, workers' compensation, and turnover. We also calculated that approximately \$2562, or 26% of those costs, might be saved if these organizations were able to achieve best-practice levels of performance through better coordination and management of their HPM programs. Further, we provided some insights as to how best-practice organizations implemented their HPM programs.

One might question the precision of some aggregate HPM cost figures reported here because of the significant challenge faced in gathering and comparing dollar

amounts and other metrics that vary across programs and across organizations. Moreover, within the HPM benchmarking study, we did not address the issue of low productivity while at work. However, the most important findings of the study are that HPM costs are huge, they are not limited to medical expenditures, they can be a significant financial drain for employers and their employees, and they represent a significant opportunity for quality-of-life improvement and cost savings. Our aim was to make employers more aware of their total HPM expenditures and to push them toward better management, increased coordination, and greater synergy across functional areas. Many leading organizations believe that in the near future, such an approach will become the norm (rather than merely an option), given the realities faced by employers.

One might also question the selection of the difference between actual experience and the 25th percentile as the rationale for calculating the magnitude of the opportunity for HPM improvements and savings. We chose the 25th percentile because it seemed achievable. In reality, expenditures in some areas (eg, health promotion, prescription drugs, EAP programs, mental health treatment, work/life programs) may need to be *increased* to achieve overall HPM cost reduction and productivity enhancement. In future investigations, it would be interesting to differentiate between HPM programs that are primarily investments in employee health and well-being and those that can be viewed as expenses resulting from the failure to invest in building and maintaining productive human capital.

We are too early in our investigations to precisely estimate the impact of individual program changes, not to mention aggregate HPM program changes, on an organization's productivity. Nevertheless, to begin the discussion, we

chose the 25th percentile as a credible and achievable target for performance improvement. Individual organizations should examine the management of their HPM programs and work with their vendors and internal staff (from multiple departments) to identify their realistic potential for cost savings.

An important lesson strongly supported by the results of the HPM benchmarking study is that a broad approach is needed to manage HPM-related costs. Narrowly focused programs influencing only medical costs are not sufficient; these programs account for less than half of the HPM dollar. The next level of investigation is to identify which models are best suited for introducing and maintaining HPM programs and the relative success of these programs.

We are poised to begin what has been termed by some as the next and most important paradigm shift for American businesses in the areas of health care benefits and human resources (Sullivan S. Remarks delivered at the HPM Consortium Benchmarking Meeting, Dulles Airport, Washington, D.C., March 29, 2000.) Although some employers are ready to divest their responsibility for providing health benefits to their employees (reflected by a rising interest in defined contribution plans), others are convinced that they can exert a substantial influence on their organization's performance through focused investment in health and productivity management. The results of the benchmarking study support the efforts made by employers who are convinced that they can make a significant difference in their organization's performance by improving the health and well-being of their workers.

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### Future Car Electronics Power

People are spending increasing amounts of time in their cars. As a result, automakers are equipping vehicles with more and more power-draining creature comforts as selling points (eg, navigational systems, front and rear passenger climate controls, compact disc players). But performance and handling improvements under the hood, such as dynamic stability controls, electronic suspensions, etc, also need power from the 14-volt system featured in today's cars. To handle the situation, automotive manufacturers are embracing a 42-volt standard for system voltage as they design new products. The challenge for designers is that the cost of the new electronics cannot prohibit the economic production of automobiles. This hurdle must be cleared before cars with 42-volt systems will become available to consumers.

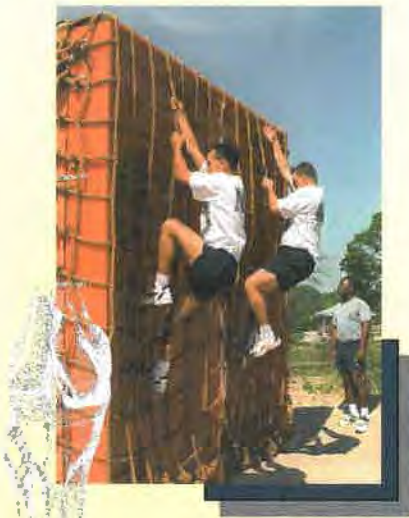
Today, the average 14-volt load is between 750 watts and 1 kilowatt, with peak loads of up to 2 kilowatts, depending on the car and its accessories. By 2005, peak loads as high as 12 kilowatts will be commonplace. . . . With electronic controls in a 42-volt system costing in the range of 5 to 10 cents per watt (or \$50 to \$100 per kilowatt), instead of the current 1.2 to 1.3 cents, automakers are eager to see the costs of such systems come down.

—From Kassakian JG, Miller JM, Traub N. Automotive electronics power up. *IEEE SPECTRUM.* 2000;37(5):34-39.



# NEHC

## Injury Prevention & Physical Fitness Products and Services



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# NEHC Injury Prevention

## About the Program :

Navy Environmental Health Center (NEHC) serves as a **primary injury prevention resource** for the Department of the Navy and for other Department of Defense agencies. To combat the effects of injuries, the NEHC injury prevention program specializes in the following:

- 1: Determining the existence and size of the problem of injuries
- 2: Identifying the causal risk factors of injuries through surveillance and research methods
- 3: Determining what prevents injuries from occurring
- 4: Developing and providing guidance for implementing prevention strategies and program through evidenced based, data-driven injury prevention decisions
- 5: Continuing surveillance and monitoring effectiveness of prevention efforts

Injuries are the leading health problem impacting on U.S. military force readiness today - leading in causes of death, disability, decreased readiness, and lost productivity. Currently, 42% of Sailors and 53.8% of Marines are separated for medical reasons due to musculoskeletal disorders.

## Program Mission:

to increase readiness and decrease personnel attrition by decreasing incidence and/or severity of musculoskeletal injury

## Program Goals:

1. Reduce the frequency and severity of unintentional injury
2. Provide quality information to decision makers in support of injury prevention
3. Support a musculoskeletal continuum of care that focuses on an accelerated return to duty after an injury has occurred: early injury identification, accurate and timely rehabilitation, and reconditioning of an injured Sailor or Marine
4. Anticipate customer needs, providing effective and timely transfer of information

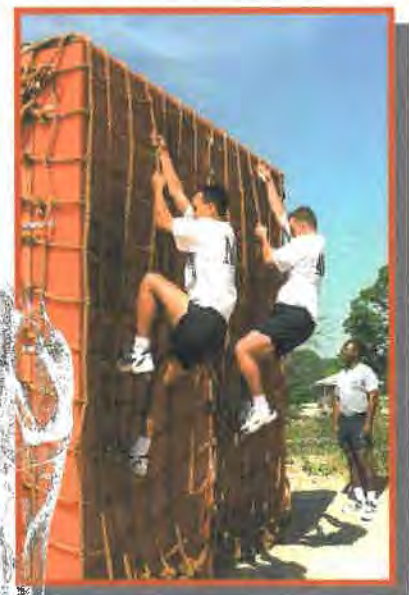
## Primary Components:

- Operational and physical training Injuries (military specific injuries)
- Occupational / ergonomic injuries (non-military specific)
- Sports and recreational injuries

## Products and Services:

- Resource and supplies development and distribution
- Injury epidemiology "scientific detective"
- Prevention strategies and programs
- Research and informatics
- Training

*Musculoskeletal injuries include injuries to the bone, muscle, joints, ligaments, cartilage, and tendons.*







# NEHC

## Physical Fitness

### About the Program :

Physical fitness of Sailors and Marines is an essential and critical component of operational readiness and meeting deployment schedules. NEHC serves as Navy Medicine's program manager for physical fitness. The program focuses on providing products and services that guide military affiliates in performing moderate to vigorous levels of physical activity without undue fatigue or injury and the capability to maintain such ability to ensure mission readiness.

In addition to operational physical readiness, NEHC promotes the importance of physical activity participation as it relates to overall health and quality of life. Regular exercise decreases stress levels, increases energy levels, provides an enhanced feeling of well-being, and protects against the development and progression of many chronic diseases.

The benefits of physical activity are well established, and emerging studies continue to support an important role for habitual exercise in maintaining overall health, well-being, and operational readiness.

### Program Mission:

to provide leadership in performing moderate to vigorous levels of physical activity without undue fatigue or injury and the capability to maintain such ability to ensure military readiness

### Program Goals:

1. Provide products and services that will guide military affiliates in designing, implementing, and evaluating safe and effective physical activity programs.
2. Provide quality information to decision makers in support of physical fitness.
3. Reduce incidence and/or severity of musculoskeletal injury through the promotion of safe physical training practices.
4. Anticipate customer needs, providing effective and timely transfer of information.

### Primary Components:

- Aerobic (Cardiovascular) Fitness
- Muscular Strength and Endurance
- Flexibility

### Products and Services:

- Resource and supplies development / distribution
- Epidemiology "scientific detective"
- Prevention strategies and programs
- Research and informatics
- Training





# **Injury Prevention & Physical Fitness Programs**

**ACTION REPORT: July 02 - June 03**

**Navy Environmental Health Center, Portsmouth VA**  
*Program Manger of Navy Medicine's Health Promotion Program*

## **1. Program Manager, Injury Prevention**

**Program Mission:** to increase readiness and decrease personnel attrition by decreasing incidence and/or severity of musculoskeletal injury.

**Program Goals:**

- Reduce the frequency and severity of unintentional injury.
- Provide quality information to decision makers in support of injury prevention.
- Support a musculoskeletal continuum of care that focuses on an accelerated return to duty after an injury has occurred: early injury identification, accurate and timely rehabilitation, and reconditioning of an injured Sailor or Marine.
- Anticipate customer needs, providing effective and timely transfer of information  
Continue surveillance and monitor effectiveness of prevention efforts.

## **2. Program Manager, Physical Fitness**

**Program Mission:** to provide leadership in performing moderate to vigorous levels of physical activity without undue fatigue or injury and the capability to maintain such ability to ensure military readiness.

**Program Goals:**

- Provide products and services that will guide military affiliates in designing, implementing, and evaluating safe and effective physical activity programs.
- Provide quality information to decision makers in support of physical fitness.
- Reduce incidence and/or severity of musculoskeletal injury through the promotion of safe physical training practices.
- Anticipate customer needs, providing effective and timely transfer of information.

## **3. Program Manager, Tobacco Cessation and Control (March – June 2003)**

Serve as the interim Tobacco Cessation Program Manager for NEHC. Manage oversight of tobacco cessation practices and initiatives. Maintain program operations: ensuring weekly updates on programs are maintained; respond to taskers; provide up to date tobacco cessation notifications and field marketing/updates; respond to field questions/calls; compile tobacco program metrics; provide leadership with a tobacco cessation program overview (CAPT Bohnker); focus on high priority initiatives CAPT Long tasked with specifically such as DoD Mandated Research project: Support for Research on Military Consequences of Tobacco Use and Effectiveness of a Military Targeted Educational Intervention, organize newsletters, develop and submit Friday Facts articles, etc; maintain a record of tobacco activity events/actions for full time tobacco cessation Program Manager.

#### **4. Physical Fitness Awareness Media Developed for US Armed Forces Development: October 21 - 25, 2002, Broadcast 2-03 - present**

Ms. Diana Settles worked with OSD American Forces Information Service (AFIS) and Filmhouse (production company) in the development and publication of 6 television and 6 radio awareness spots for physical fitness. These 30 second awareness quick clips produced the week of October 21 - 25 are designed to improve the interest (encouraging military personnel to maintain an active lifestyle) and the knowledge of the primary components of physical fitness: aerobic fitness, muscular fitness, flexibility, and body composition. **The advertisements have been broadcasted throughout Operation Iraqi Freedom to deployed military personnel throughout the US Armed Forces.** Ms. Settles provided a comprehensive professional review of the scripts that were used during filming and recording and also provided recommendations for on-camera talent/ national subject matter experts in exercise physiology. Ms. Settles is currently working with OSD/AFIS in designing a safety/injury prevention awareness media campaign for deployed activities.

#### **5. Presentations: (description of presentations provided upon request)**

**06 November 2002:** Athletic Business Conference, Orlando, FL, briefed on Primary Sports Injury Prevention at the Navy Physical Fitness Workshop held in Orlando, FL.

**December 02 & 22 January 2003:** Office of the Secretary of Defense, Personnel and Readiness Division: Briefed on Sports and Recreational Injury Prevention in the Military

**December 02 & 22 January 2003:** Assistant Secretary of the Navy (Personnel and Readiness) Office, Briefed on the Impact of Injuries on DON Readiness.

**January 2003:** Department of the Navy Sports Medicine Work Team, Briefed on Certified Athletic Trainers in the Military Clinical/Operational Setting

**March 2003:** NEHC Preventive Medicine Epidemiology Team & NEHC Population Health Team: Brief on The Impact of Musculoskeletal Injuries on Readiness

**May 2003:** Naval Station at Anacostia Annex, Navy Fitness Personnel in the DC Area, briefed on NEHC Physical Fitness and Injury Prevention Products and Services

**June 2003: National Athletic Trainer's Association Conference:**

1. Building 21<sup>st</sup> Century Competencies to Achieve the Vision of the NATA
2. Navy Injury Prevention Update
3. Military Injury Prevention Update
4. Strategic Planning Session

#### **6. March 12, 2003: Navy Recruit Fitness Awareness Campaign.**

NEHC Physical Fitness Program Partners with Health Promotion Council, Naval Training Center Great Lakes to promote the awareness of physical fitness. NEHC is providing RTC Great Lakes with digital copies of Navy Physical Fitness Posters to promote the awareness of physical fitness among the Navy Recruit population. The four poster series promotes the three components of physical fitness: cardiovascular, muscular strength and endurance, and flexibility. The Navy Trains approx. 50,000 recruits at its Recruit Training Command (RTC) each year. Much critical learning and decision making is made during the early months of a sailor's career at this location. RTC is undergoing reconstruction of all the recruit barracks. Approval has been granted to place 40 framed posters in each of the new barracks including galley spaces within these buildings. The posters will hang primarily in passageways. The eventual plan is to duplicate this process in all RTC barracks. When complete, every enlisted member of the Navy will have lived for 10 weeks looking at these posters.

7. **Sports Medicine Work Group Progress Department of the Navy (DoN)**  
**Musculoskeletal Injury Prevention Efforts**

- **Project Overview:** Work with the Sports Medicine Work Group, led by Navy Medicine, to progress sportsmedicine efforts in the Department of the Navy (DoN). This work group is providing leadership in formalizing an integrated health system focused on increasing DoN readiness and decreasing personnel attrition through a spectrum of primary, secondary, and tertiary M/S services. Navy Medicine is working closely with USMC Training Command (TECOM) and USMC Personal and Family Readiness Division (MR) on this initiative. Navy Medicine Headquarters (BUMED) focus on Sports Medicine & Reconditioning Team (SMART) Sites = NCAA 1 Training Rooms. USMC is leading the development of primary injury prevention component– including the employment of ATC's and implementation of an injury surveillance system to be implemented at training sites.
- **July 02:** Grand Opening of SMART Center Pearl Harbor, HI – 15 yards from the pier. Navy's first "blue side – all Navy" SMART Center.
- **July 02:** Provided initial draft of SMART Center Success Story to CNO's Naval Occupational Safety and Health Success Stories. Article Published in December 02. <http://www.navosh.net/strategic/success/stories/pdfs/SMARTCENTERFinal.pdf>
- **Sept 02:** Defined with work group SMART Center (primary program components /staffing) and Navy Musculoskeletal Continuum of Care.
- **November 26, 2002:** RADM Kathleen Martin, Deputy SG briefed on the SMART continuum of care. Work group given a "green light" to proceed.
- **Jan-Feb 03: Memorandum of Agreement (MOA) Developed:** MOA between United States Navy BUMED, USMC Training and Education Command (TECOM) and Headquarters USMC Personal and Family Readiness Division (MR) is in final stages (1 signature from the SG!). This MOA establishes a formal collaboration for implementation of the USMC SMIP initiative. This collaboration is designed to enhance and sustain a continuum of care for musculoskeletal injuries. **The cornerstone of this SMIP initiative is the Certified Athletic Trainer (ATC).** Working within their scope of practice and performance domain as noted in reference the NATA BOC Role Delineation Study, the ATCs optimize access to primary and secondary musculoskeletal injury prevention. The MOA recognizes the NATA Board of Certification (BOC) as the primary reference for enhancing the continuum of care for musculoskeletal injuries. (Role Delineation and Standards of Practice are referenced in the MOA). The MOA 1 signature away from SG.
- **Assist in the USMC ATC Scope of Care and assembly of Athletic Training Rooms:** ATC's are currently working with the SMART Centers. The Marines have recognized the need for more mobile, smaller Athletic Training Rooms (ATR's), which may be deployed in the field vs. a more massive training command center. USMC TECOMs currently hiring ATC's at several pilot programs to focus on primary and secondary injury prevention efforts. Developed ATC scope of care, facilities design, and equipment listing.
- **ATC's Hired:** Through USMC Training Command for ATR's. (see listing on back page).
- **Jan-Feb 03: Review of draft letter from the Deputy Chief, Medical Operations Support** written to provide CO's at Naval Hospitals an overview of the purpose of the SMIP Initiative and to provide direction for the implementation of ATC's into the Navy medical arena to ensure the implementation of the MOA in a consistent manner.
- **Jan 03: Provide overview of Role of ATC's in the Clinical/Operational Setting:** Proposed that the ATC will work under the direction of a privileged physician. Preferred this physician is a board cert.; fellowship trained, Primary Care Sports Medicine MD/DO.
- **Feb 03: SMART Team Development of Credentialing Package:** Work group actively developed the package (standards of practice /research/role delineation were my focal areas).
- **Feb 03: Developed CEU Requirements for ATC's;**
- **March 03: MEPRS Established for Sports Medicine Clinics:**
- **May 03: Provide Assessment Tools for Determining the Efficacy of SMART Centers**
- **June 03: Work with NATA to Improve Evidence Based Competencies of ATC's**
- **Support SMART Field Activities:** data collection and analysis, resources, marketing.

**8. NEHC Conference Planning: Development of title focus/objectives, recommendation of speakers for fitness/injury prevention presenters at the IDC and DoD HP Conference**

**Injury Prevention:**

- Current Practices and Initiatives in US Armed Forces Injury Prevention
- Prevention, Rapid Diagnosis, Treatment, and Rehabilitation of Most Common
- Musculoskeletal Injuries in the US Armed Forces (1 hour presentation)

**Physical Fitness:**

- Energizing Physical Activity Practices Among Military Personnel (\*Behavior Modification and Physical Activity)
- Supplements: Sorting the Fact from the Fiction
- Comprehensive Update of US Physical Activity (CIAR Briefing)
- Strength Training Through Ranks of Life
- American College of Sports Medicine (ACSM) Exercise Leader 3 Day Course

**9. ESTABLISHING Partnerships with Centers for Personnel Development:**

**A. Navy Fitness Pilot: Tracking Physical Activity Practices**

10 – 11 December 02: First official partnership with CPD. First meeting held 10/11 December 02. The goal of this meeting is to identify a product to pilot test on the Theodore Roosevelt Battle Group beginning January/February for at least 3-6 months. Further deployment of a physical activity tracking system will depend on these results. This requires the adoption of a product to support the development of the plan and a tracking mechanism to document actual physical activity and progress. The data collected will not only document individual progress, but also provide population health data to improve health and target other interventions.

**B. 13 February 2003: Evaluating Web-Based Physical Activity / Personal Training Resources**

NEHC Health Promotion staff hosted a meeting with Center for Personal Development and Navy Personnel Command - 651B to evaluate web-based personal training products currently being developed under two SBIRS (Small Business Innovative Research) for the Department of Defense. The programs were evaluated for potential use on Navy Knowledge on Line; NKO ([www.nko.navy.mil](http://www.nko.navy.mil)) is an integrated delivery system for learning, personnel development and knowledge management available to all active-duty, reserve and retired Sailors and Marines.

**10. Physical Fitness Awareness and Promotions:**

- **March 05, 2003 Expeditionary Force Physical Fitness**  
At request from USAF SG's office, BUMED M3M and TMA, Diana Settles, Program Manager, Physical Fitness, provided an overview of Physical Fitness Practices in the deployment / expeditionary force setting.
- Provided Marketing Memo of Cruise into Shape to BUMED and to Friday Facts
- Developed resources and design briefing for Physical Fitness and Injury Prevention
- Worked with BUMED PAO to develop a story on Force Health Protection Nutrition/Activity
- Revised injury prevention and physical fitness homepages.



- 11. March 2003: Data Collection and Analysis of Navy Musculoskeletal Hospitalizations and outpatient data.** Worked with population health team to provide background of problem of injuries in the DoN, causes, prevention strategies, and current practices. LCDR Eric Koswaski, UHSUS Resident analyzed M2 data and provided a comprehensive overview of the following information:
- hospitalizations for musculoskeletal diagnosis
  - paygrade
  - age
  - frequency of diagnosis by 3 digit Icd9,
  - Top 25 inpatient ICD-9 (3 digit and 5 digit) ages 34 - 42,
  - Top 25 inpatient ICD-9 (3 digit and 5 digit) ages 17-25,
  - frequency of diagnosis by 5 Digit ICD9
  - Top 25 DRG's, Top 25 MS DRG's ages 17 - 25, Top 25 MS DRG's ages 34 - 42
- 12. March 2003: Business Plan and Budget for Physical Fitness and Injury Prevention**
- Defined primary products and services for program management areas
  - Updated Program overview, mission, goals, primary components, and products and services.
  - FY 03 Budget: Finalized, including gap analysis & submitted to Lynn Klanchar
  - FY 04 Proposed Budget: completed and submitted
  - Review of Business Plan
  - Participated in Strategic Planning Sessions
- 13. February 2002 Updated the General Medical Officer (GMO) Manual for medical officers in operational areas.**
- Authored the following components:
- Injury Prevention
  - Physical Fitness
- 14. November 2002: Authored Pedometer 1 Page Proposal for Providing the Opportunity for Pedometer Use Among NEHC Personnel**
- PURPOSE:** To provide the opportunity to NEHC personnel to use a pedometer for the purpose of providing a self-reporting tool for measuring and motivating. Provided the following information in the proposal:
- purpose
  - background/Impact of physical activity on the US Workforce
  - discussion
  - recommendation
- 15. NEHC Command Excellence Awards: Review of Fitness/Injury Section of Health objectives, baselines, targets**

**16. May - June 03: NMC Portsmouth Return to Work Back Program**

- **Provide Epidemiological Support**
- **Assist in Defining the problem**
- **Research Opportunities for Project Funding**
- **Research Best Practices? Is the NYU Back Injury Program the Best?**

NMC Back Care Clinic Overview of Return to Work Program: The immediate usefulness to the Armed Forces of this program will be a significantly improved return to work rate. This will have significant impact in many areas. First and foremost, it will reduce the number of lost workdays and personnel losses secondary to limited duty. Secondly, it will reduce the costs of medical treatment and costly diagnostic procedures. Thirdly, it will reduce the administrative and clerical burden by reducing the number of limited duty and medical boards being processed. Finally, it will result in improved patient satisfaction.

The long-range usefulness of this program to the Armed Forces will first and foremost be improved operational readiness. Additionally, the results of this study can significantly impact how the DoD disperses its resources to have the greatest effect on productivity and operational readiness of active duty military personnel.

**17. April 03: Begin partnership with the BUPERS Limited Duty (LIMDU) Working Group:**

NEHC and BUMED have been cautiously working this issue for the past couple of months. This request has already reached the BUMED level. Because the request for decreasing limdu's by 15% came from ADM Hoewing, I ensured to write out detailed correspondence to my Director (CAPT Bohner and to BUMED M3M (CDR Cain). In short, we need to formalize the initiative a bit more before going "prime time" with this. We have data from independent sites, but we still need to formalize this Sports Medicine & Injury Prevention initiative through BUMED before showcasing to CNO reps. Feedback from BUMED is that we first need to research efficacy of the SMART Centers through NHRC before presenting at this level.

**18: June 2003: Provide Background Information for the Development of the Department of the Navy IPT on Health and Wellness**

**19: March 2003: Team Captain: NEHC HP Cruise into Shape Team**

**NEHC is Cruising into Shape! 36 lbs lost in 30 days!!!!!!**

The NEHC Health Promotion Team is now 36 lbs. lighter after participating in the March **Cruise into Shape** Campaign! "Jump Aboard and Crews into Shape".... That's exactly what the NEHC Health Promotion Team did during the month of March! **Crews into Shape** is a month long behavior modification program that promotes healthy physical activity and nutrition daily practices. This 4 week program was marketed to the Navy community by the NEHC Population Health Directorate's SHIPSHAPE Weight Management Program; over 40 groups worldwide participated during this year's March event!

**20: Continuing Education Training:**

- **November 2002:** National Athletic Business Conference, Orlando, FL
- **June 2003:** National Athletic Trainers Symposium, ST Louis, MO

# ATC New Hires:

## Quantico, VA

Officer Candidate School: 16 June 2003

The Basic School: 27 May 2003

## Parris Island, SC

2 begin 2 June, the other begins 9 June

## San Diego, CA

1 June, 2003

## Camp Lejeune, NC

27 May, 2003

## Camp Pendleton, CA

16 June, 2003

What	ORM	Rapid Detection and Treatment	Rapid Rehabilitation
	<i>Primary Prevention</i>	<i>Secondary Prevention</i>	<i>Tertiary Prevention</i>
Who Where	USMC	Athletic Training Room	BUMED Sports Medicine and Reconditioning Therapy
How	Policies Procedures Curriculum Manuals Acquisitions		

# Sports Medicine Reconditioning Team Center opens at Pearl Harbor



PHOTO BY WILLIAM E. GOODWIN photo

Lt. Geoffrey Keenan provides physical therapy for a patient at the new SMART center located across from Naval Medical Clinic Pearl Harbor, Makaiapa Branch.

**JO2 Daniel J. Calderón**  
Assistant Editor

"What's old is new again," said Capt. Joseph Moore, Naval Medical Clinic Pearl Harbor's commanding officer, at the grand opening of the Sports Medicine and Reconditioning Team

(SMART) Center on July 18. "This new and innovative facility came as a result of dreams," began Rear Adm. Robert T. Conway Jr., Commander, Navy Region Hawaii/Commander, Naval Surface Group Middle Pacific. "Out of dreams came hopes and out of hopes

came action."

The SMART center is the first of its kind for the Navy. Most other similar centers are on Marine Corps bases. Planning for the facility began in January. The center's main goal is to focus on managing injuries and educating their patients on ways to prevent any future injuries.

"We want you to get seen as quickly as possible to find out what the injury is so you can get started on treatment," said Lt. Cmdr. Debra DeLeo, director of the SMART clinic.

There are seven areas in the clinic, each devoted to a different aspect of treatment. The largest area is the combined evaluation area and reconditioning area. The clinic has averaged 30 consults a day and 20 new patients.

DeLeo compared figures, taken from the center's actual opening date of July 3 to the grand opening date, for statistics on injuries. The highest percentage of injuries was leisure sports at 36 percent and PRT training at 33 percent.

Of the injuries seen, 25 per-

cent were knees and 22 percent were back injuries. She also pointed out that not only those people who are "out of shape" get injuries. Her data showed that 25 percent of those injured exercised daily, 53 percent exercised three times a week, 11 percent exercised once a week and only eight percent rarely exercised.

DeLeo also used the information she and her staff gathered for comparison to data from the old physical therapy (PT) clinic.

In the past, eight percent of patients waited an average of one to two months before being seen by the PT clinic, five percent waited two to three months and 18 percent waited over three months.

"If the injury was acute, the patient would end up at an acute care center and a consult would get set up for someone to diagnose the injury," said DeLeo. "Then the patient would have to wait for someone to contact them for treatment. If an orthoped sees them, then they would put in a consult for therapy. In the meantime, the original in-

▼ See SMART A 2

A-2 Hawaii Navy News July 26, 2002

## SMART: Education key to rehabilitation

Continued from A-1

jury is not being treated."

With the SMART clinic, the process is significantly reduced. DeLeo's statistics show 48 percent of patients are seen within three-four days of an injury and 10 percent are seen the same day.

Most of the patients have been enlisted males. The statistics show 90 percent of patients are enlisted and 89 percent are male. So far the results of the SMART concept have been positive. Twenty-eight percent of the patients returned to full duty within five days of their injury.

"We're gonna give them the tools," said DeLeo. "We're going to educate them. We're going to motivate and encourage our patients to own their own injury. The whole point is education. We teach them about what happened, why that particular limb or body part did what it did and how to prevent it from happening again."

The clinic is open from 7:30 a.m. to 4 p.m. Monday through Friday, except for Thursday, when it closes at 11:30 a.m. for training.

Patients can walk in with a consult from their primary care manager from 7:30 a.m. to 9 a.m. and from 1 p.m. Patients must have a consult from their PCM and be in workout clothes to be seen at the facility.





THE SECRETARY OF DEFENSE  
1000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1000

May 19, 2003

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARIES OF DEFENSE  
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING  
ASSISTANT SECRETARIES OF DEFENSE  
GENERAL COUNSEL OF THE DEPARTMENT OF  
DEFENSE  
INSPECTOR GENERAL OF THE DEPARTMENT OF  
DEFENSE  
DIRECTOR, OPERATIONAL TEST AND EVALUATION  
ASSISTANTS TO THE SECRETARY OF DEFENSE  
DIRECTOR, ADMINISTRATION AND MANAGEMENT  
DIRECTOR, FORCE TRANSFORMATION  
DIRECTOR, NET ASSESSMENT  
DIRECTOR, PROGRAM ANALYSIS AND EVALUATION  
DIRECTORS OF THE DEFENSE AGENCIES  
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Reducing Preventable Accidents

World-class organizations do not tolerate preventable accidents. Our accident rates have increased recently, and we need to turn this situation around. I challenge all of you to reduce the number of mishaps and accident rates by at least 50% in the next two years. These goals are achievable, and will directly increase our operational readiness. We owe no less to the men and women who defend our Nation.

I have asked the Under Secretary of Defense for Personnel and Readiness to lead a department-wide effort to focus our accident reduction effort. I intend to be updated on our progress routinely. The USD(P&R) will provide detailed instructions in separate correspondence.

A handwritten signature in black ink, appearing to read "R. M. Gates", written over a horizontal line.



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