

Prevention is the Best Way to Health

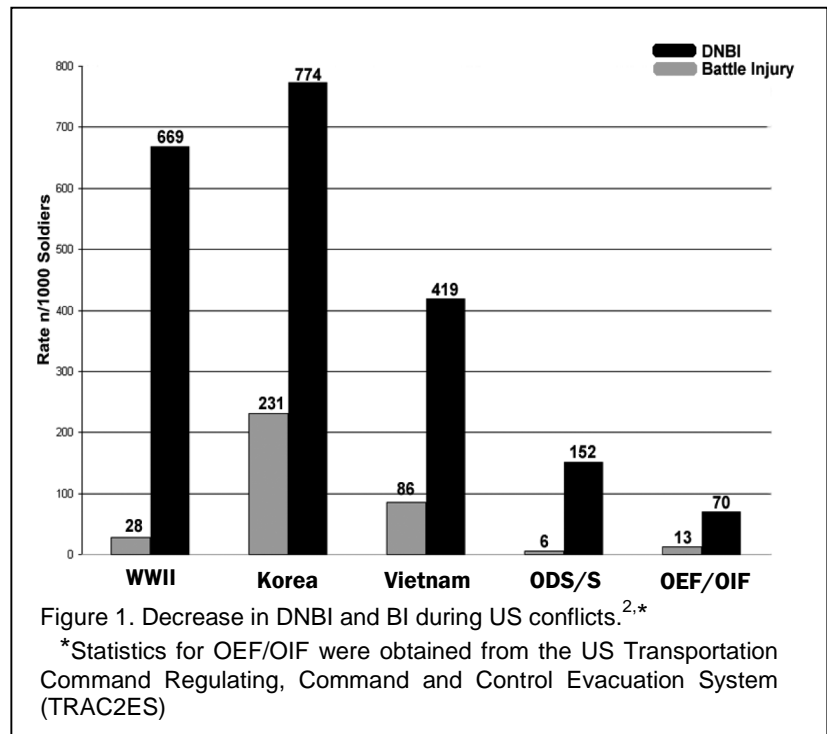
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Health is an essential element of military readiness, and prevention is and always will be the best way to health. Preventing diseases and conditions that threaten the health of the warfighter is more operationally sound since it maximizes available manpower. It is more beneficial to the Soldier, from a well-being perspective, to stay healthy and avoid all that the hospital has to offer, such as long waiting room times, diagnostics, and treatment. When considering healthcare costs, both short-term and long-term, prevention again wins out. In an ideal world, the military would be able to minimize disease and nonbattle injuries (DNBI), through prevention and health promotion, while optimizing the restorative medicine resources and applying them toward those diseases and conditions that are not readily preventable, especially combat injuries.

This article takes a brief look at military preventive medicine, its background, its current status, and some future considerations for its use in improving the health of our warfighters.

Currently, in our nation, approximately 97% of our medical costs are focused on the “restorative” aspect of health care or “fixing” our medical problems. The other 3% goes to governmental public health expenditures.¹ Military health expenses are similar. Over the past century, applying the appropriate levels of proactive and responsive approaches to health care seems to have worked well. Figure 1 shows the dramatic decrease in both DNBI and battle injuries (BI), using hospitalization rates, during various wars and conflicts from World War II, through Operations Enduring Freedom and Iraqi Freedom (OEF/OIF), including Operations Desert Shield and Desert Storm (ODS/S). The rates for Operations Enduring Freedom and Iraqi Freedom are approximately one-tenth that of

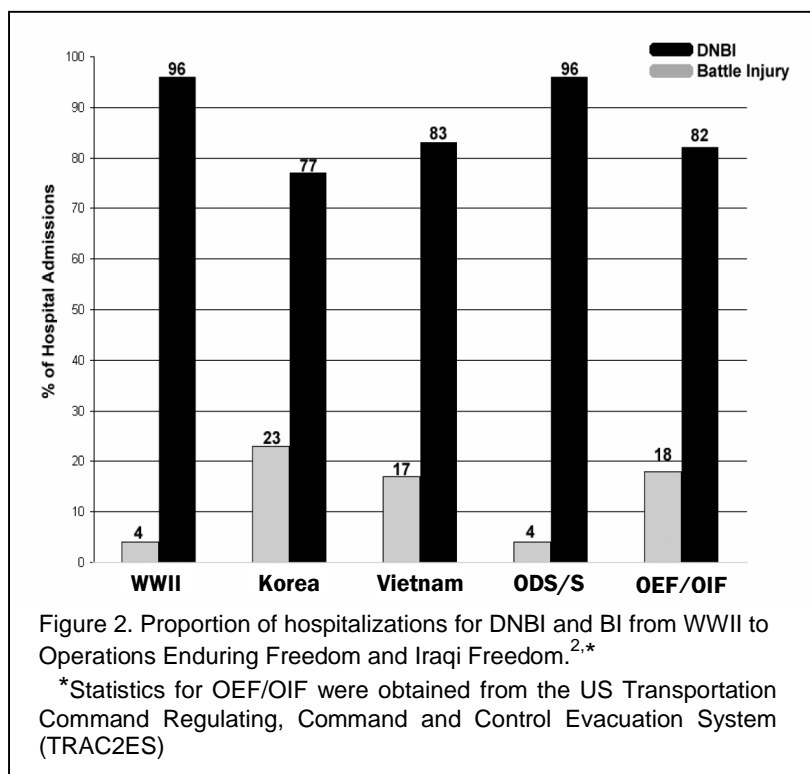


World War II and the Korean Conflict. However, the proportion of hospitalizations for DNBI compared to BI has not changed significantly and is actually almost the same or higher now than during the conflicts in Korea and Vietnam, as shown in Figure 2. In other words, while Army medicine has dramatically improved overall, the Army is still forced to dedicate a tremendous amount of resources to DNBI. The Army must do a better job of prevention, ultimately requiring a larger investment than the current 3%.

Leadership clearly recognizes the value of prevention. The recent Department of Defense (DoD) *Quadrennial Defense Review Report* (6 February 2006), states: “It is the Department’s goal to have a lifetime relationship with the entire Department of Defense family which maximizes prevention, wellness and personal choices, and responsibility.”³ The DoD *Force Health Protection Capstone Document* adds: “Medical assets must be configured to support health promotion, health

hazard assessment, implementation of countermeasures and the provision of essential care of the injured and ill in theater and their rapid evacuation to definitive medical care outside of theater of operations. Force Health Protection supports service members with a full spectrum of health services that (1) emphasize fitness, preparedness, and preventive medicine; (2) improve the monitoring and surveillance of forces in military operations; (3) enhance Soldiers' and Commanders' awareness of health threats before they can affect the force; and (4) support the healthcare needs of the fighting forces and their families across the continuum of medical services."⁴ DoD Directive 6200.4 directs all members of the Active Components and the selected Reserve Components to be physically and mentally fit. Commanders, supervisors, individual service members, and our health system have been given the responsibility to "promote, improve, conserve, and restore the physical and mental well being of members of the Army Forces across the full range of military activities and operations."⁵ Specific verbiage regarding prevention includes its requirements for all service components to "promote and sustain a healthy and fit force, prevent injury and illness, [and] protect the force from health hazards."⁵

The Army's "bible" for these preventive measures is *Army Regulation 40-5*, in which preventive medicine is described as "the anticipation, prediction, identification, surveillance, evaluation, prevention, and control of diseases and injuries."⁶ The regulation also delineates 9 major functional areas of support to military personnel and their families, in garrison and deployed settings, throughout the world. What is key to this publication is that responsibilities for preventive medicine are given to a wide variety of people, from 3 different assistant secretaries of the Army, to 4 primary deputy chiefs of staff, The Surgeon General, major commands, regional medical commands, military treatment facilities, veterinarians, dentists, commanders at all levels, installation commanders, leaders, supervisors, and individuals.⁶ Dr. Craig Llewellyn, in the *Textbook of Military Medicine...*,⁷ talks of the far-reaching scope of preventive medicine throughout the entire military force. He says the



"promotion and preservation of health and the prevention of illness and injury can rarely be accomplished solely through medical channels."

What we call preventive medicine encompasses a very broad spectrum of identifying, assessing, and mitigating health risks to our personnel. Because the Army deploys globally, those health risks are spread out geographically as well as culturally. In today's world of easy, quick transportation, one country's endemic diseases can become an outbreak in another country's populace almost overnight. Public health in one country clearly influences public health in many other countries. Laurie Garrett, in *Betrayal of Trust, the Collapse of Global Public Health*, agrees, saying "Public Health needs to be—must be—global prevention."⁸ With the stresses and operational tempo of our military deployments, it is imperative to recognize the potential for exposures to unusual diseases and environmental conditions. Also, lifestyle, nutrition, vehicles, weapons and equipment, and disease vectors all have potential impact on the Soldier's health. The proactive approach toward minimizing the negative effects of these health impacts is critical, not only to the individual Soldiers but also to their units, our nation, and our nation's healthcare system. There are multiple examples of preventive medicine successes and failures throughout our

military history. The *Textbook of Military Medicine* names many successes, including yellow fever in Cuba and skin disease in Vietnam. Failures include British dealings with typhoid fever in the Second Boer War and with malaria in World War I, and the US involvement with heat and cold injuries in World War II. It should be noted that all were heavily influenced by command emphasis on prevention, or the lack thereof.⁷

In today's world, there are emerging or reemerging diseases, such as tuberculosis, malaria, *Acinetobacter* infections, leishmaniasis, and *E.coli* O157:H7 infections; zoonotic diseases associated with the animals of the various regions; chronic diseases, many of which are related to nutrition and other lifestyle choices, such as heart disease, lung cancer, diabetes, etc; and illnesses related to exposure to toxic industrial chemicals, toxic industrial materials, and pesticides. Our Soldiers deploy to locations with threatening environmental conditions, where the soil, air, water, and food, in many cases, pose far different threats than most areas of the US. Our military personnel use weaponry, vehicles, and other equipment that present inherent risks to hearing, vision, and other organ functions. Occupational and environmental exposures go beyond just the deployed setting; the garrisons, and their buildings, roads, property, and waterways can be dangerous as well. Natural and man-made disasters on our own soil and in other nations have presented their own form of health threats and, accordingly, the need for public health-related interventions.

The Army Medical Department (AMEDD) preventive medicine team encompasses a wide range of expertise in a myriad of locations, with the ability and flexibility to provide local support while maintaining the ability to project wherever and whenever the need arises. The Proponency Office for Preventive Medicine is responsible for policy making and oversight in the Office of The Surgeon General. The US Army Center for Health Promotion and Preventive Medicine provides the operational foundation for Army military public health, preventive medicine and health promotion. The Center is globally positioned, with capabilities which are easily projected when needed. Smaller but fully functional capabilities are found with individual officers and enlisted Soldiers assigned to brigade combat teams, preventive medicine detachments assigned to medical brigades and medical commands, the two area medical laboratories, and the

preventive medicine departments found at the Army military treatment facilities. From local installation support (such as industrial hygiene, immunizations and occupational health services) to the projected support provided by deployed individuals, detachments, and Special Medical Augmentation Response Teams—Preventive Medicine to Iraq and Afghanistan, the Center's entire team does a lot with relatively few resources. After Hurricane Katrina hit the southern US coast, military preventive medicine personnel were deployed quickly. When the earthquake hit Pakistan in 2005 and the US Army sent medical personnel to help, preventive medicine experts were an important and visible part of the humanitarian assistance operation. When there were potential outbreaks of hepatitis C in El Paso, meningococcal disease in Europe, or tuberculosis in Afghanistan, preventive medicine experts were on the scene to determine the cause of the disease and the potential health threats to personnel. Health promotion initiatives continue to be an integral part of preventive medicine to drive down injuries, tobacco use, and alcohol abuse while enhancing nutrition and overall fitness. We are part of the continuing surveillance of occupational and environmental health threats to our military personnel, both in deployed and garrison settings, providing broad-ranging, very effective, globally committed preventive medicine capabilities, with constrained resources.

At the national level, there has been a renewed focus on health promotion and prevention, as evidenced by the *Healthy People 2010* initiative by the Department of Health and Human Services. This initiative has set out to "identify the most significant preventable threats to our health and to establish national goals to reduce those threats." Certain statistics justify this effort: Heart disease and stroke account for 40% of all US deaths each year, 64% of US adults are obese or overweight, and 31 million have asthma.⁹ Diabetes now affects 20.8 million Americans, 7% of our population and a 6.3% increase since 2002.¹⁰ Like the military, the US as a whole spends an inordinate amount on health care—15% of the gross domestic product in 2003, the highest of any member country of the Organisation for Economic Cooperation and Development (OECD). The US spends over \$5,600 per capita on total health care, more than twice the OECD average; despite that, there are indications we are no healthier than other developed countries.¹¹

As the Army moves forward, our deployments are longer and more dispersed throughout the world. Therefore, environmental exposures will increase in diversity as well as intensity. The AMEDD preventive medicine teams must keep up their vigilance of medical and environmental surveillance, communicating quickly and effectively when necessary to correct deficiencies and have a positive impact on the health of individual Soldiers or units. Health promotion efforts must continue to be aggressive. Similar to our civilian counterparts, the military has to contend with many of the health risks associated with lifestyle choices, such as tobacco use, poor nutrition, and alcohol abuse. Among male Soldiers age 18 to 25, 48% use tobacco. Over 27% of our military personnel, age 26 to 34, are overweight (with body mass index as the indicator), and over 40% of our Soldiers engage in “binge drinking” (that is, 5 or more drinks at one occasion at least once in 30 days).¹² These statistics present short-term and long-term implications, impacting not only individuals but also entire units, our military as a whole, and our military healthcare system. In the future, medical technology will help us do a better job of identifying, assessing, and mitigating health risks, and, hopefully, leaders at all levels will become actively engaged in promoting better prevention and the overall medical readiness of their Soldiers.

Just as preventive maintenance is a crucial aspect of the logistics community, drastically improving the availability, workability, and durability of our equipment and vehicles, preventive medicine is crucial to our most important resource—our people. Fixing something much more inefficient than sustaining, maintaining and improving it; this directly applies to our health. Maintaining and even improving a Soldier’s health is a much more appropriate, wiser use of resources than waiting until that Soldier becomes sick or is hospitalized. The more we prevent diseases and improve poor environmental conditions, the more resources will be available to apply to those things we cannot prevent. Prevention efforts have been and still are effective, invaluable pieces of the medical health system. And while there is continuing and growing emphasis on proactive approaches to health in today’s society and military, we must all strive toward translating that into real, even greater long-term investments in the future health of our personnel.

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