

Introduction

Good morning Mr. Chairman, Distinguished Committee Members, I have been asked to provide this committee with information on the activities of the Military Health System in support of global public health security.

The Military Health System (MHS), with over 8.7 million beneficiaries, constantly monitors health data. About 1.4 million beneficiaries are active duty Service members, many deployed or stationed frequently with their family members outside the United States. Over 300,000 new recruits from many areas of the world attend military basic training each year in an intense, controlled, close quarters environment. This creates a need for understanding health issues from around the globe, providing a unique population with challenges in preventive medicine, immunization issues, and potential for outbreaks of infectious disease. Thus, the MHS has to deal daily with public health issues on a large scale; with many unique health threats associated with training, plus operations in overseas and often austere environments with poor sanitation, encountering endemic diseases, etc. Due to these military health threats, DoD has developed extensive health protection measures and capabilities, such as in vaccine development, disease prophylaxis, and medical and environmental surveillance.

Protecting Our Military Forces

A Presidential Review Directive (NTSC-5, 1998) regarding military and veteran health protection was set up to review and make recommendations on Military/Federal Health Issues providing extensive detail and recommendations for DoD health surveillance activities for the health protection of Service members and veterans. These activities relate directly to global public health security due to requirements for protection of Service members in a worldwide deployed environment with constant infectious disease and potential bioweapons threats.

In 2000, the Institute of Medicine (IOM) published a review entitled, “Protecting Those Who Serve,” which focused on military health protection, particularly during military deployments. IOM made the following six recommendations, which are all being implemented by DoD:

1. Use a systematic process to prospectively evaluate non-battle related risk (and injuries) associated with deployments
2. Collect and manage environmental data, personnel locations, and biological samples to facilitate analysis of deployment exposures and to support clinical care and public health activities.
3. Develop the risk assessment, risk management, and risk communication skills of military leaders at all levels.

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4. Accelerate the implementation of a health surveillance system that spans the service life cycle and that continues after separation from service.
5. Implement strategies to address medically unexplained symptoms in populations that have been deployed.
6. Implement a joint computerized patient record and other automated record keeping that meets the information needs of those involved with individual care and military medical public health.

These issues all relate to global public health security, as protection of our citizens worldwide requires attention to public health issues which may be unique to specific foreign environments, as well as to those common to all developed countries.

A Global Surveillance System

DoD's surveillance activities are enhanced through the DoD Global Emerging Infections Surveillance and Response System (DoD-GEIS). The Department has for more than 100 years been a global leader in addressing public health research and operational issues. The primary thrust has usually been to counter threats to U.S. forces that need to operate in locations with infectious diseases that are not considered a major threat to citizens residing within the 50 states. A 1992 report of the Institute of Medicine entitled, "Emerging Infections: Microbial Threats to Health in the United States," urged a broader role for the DoD in recognition of its substantial globally distributed infectious disease research laboratory network. This overseas highly developed infrastructure, unique in the federal government, has been key to the development of new drugs to prevent and treat malaria and of vaccinations against diseases including hepatitis A, Japanese encephalitis, and infectious diarrhea.

Subsequent to the IOM report, the CDC and NIH, in strategic planning documents, also recognized the critical role DoD overseas labs could play in advancing the detection and response to emerging infections. A Presidential Decision Directive (NSTC-7) issued in June 1996 formally expanded the role of DoD "to include support of global surveillance, training, research, and response to emerging infectious disease threats." It called on DoD to "strengthen its global disease reduction efforts through: centralized coordination; improved preventive health programs and epidemiological capabilities; and enhanced involvement with military treatment facilities and United States and overseas laboratories."

The program has been in operation more than five years. To ensure that the program is yielding optimal benefits, the Institute of Medicine was asked to evaluate the entire effort in 2000-2001. While many recommendations were offered, the IOM concluded that DoD-GEIS is "a critical and unique resource of the United States in the context of global affairs. It is the only U.S. entity that is devoted to infectious diseases globally and that has broad-based laboratory capacities in overseas settings." The powerful capabilities of DoD-GEIS were seen as more than an opportunity to enhance

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military health and readiness or even the health of Americans in general. As highlighted in the recent National Intelligence Estimate, “The Global Infectious Disease Threat and its Implications for the United States,” emerging infections are a global issue. They have the capability to harm U.S. interests abroad through destabilizing key institutions, obstructing trade and human migration, slowing or reversing economic growth, fomenting social unrest, and complicating our response to refugee situations. Biological terrorism and warfare are additional concerns. The recent emergence of SARS in Asia and the inexorable progress of the HIV epidemic in Africa have provided ample evidence of the economic and societal damage that infectious diseases can cause. Thus, DoD-GEIS is seen as a key contributor to not only military readiness but also to international public health and U.S. foreign policy. The IOM evaluation of DoD-GEIS was not only of value internally to the Department of Defense but numerous recommendations formed a basis for elements of the Global Pathogens Surveillance Act of 2003 (S. 871) which Senators Biden, Domenici, Hagel, Lugar, Feingold, and Kennedy introduced into the Senate on 10 April 2003 and which is now with the Foreign Relations Committee.

The DoD-GEIS operates in two primary realms, the five overseas tropical medicine research units and various elements of the Military Health System. The overseas medical research units are located in Peru (NMRCDC), Egypt (NAMRU-3), Kenya (USAMRU-K), Thailand (AFRIMS), and Indonesia (NAMRU-2). Including foreign national professionals and contractors, they employ collectively over 600 persons. In addition DoD has benefited greatly from arrangements with the Centers for Disease Control and Prevention that have placed senior public health experts at NMRCDC, NAMRU-3, and NAMRU-2 for long-term assignments. These overseas assets are backed up by an extensive DoD infectious disease research and surveillance infrastructure located at institutions including the Walter Reed Army Institute of Research (Silver Spring, MD), the Navy Medical Research Center (Silver Spring, MD), the US Army Center for Health Promotion and Preventive Medicine (Aberdeen Proving Ground), the US Army Medical Research Institute for Infectious Diseases (Fort Detrick, MD), the Armed Forces Institute of Pathology (Washington, DC), the Naval Health Research Center (San Diego), and the Air Force Institute for Environmental, Safety, and Occupational Health Risk Analysis (San Antonio, TX). As a result, an unprecedented level of networking and synergistic collaboration has been fostered between these overseas and domestic elements and other institutions within the U.S. government and overseas.

The DoD overseas medical research units are among the most advanced biomedical laboratories in their respective regions. They conduct projects in over 30 countries around the world. The GEIS program at the overseas laboratories has several foci. Global influenza surveillance is one critical emphasis because of the historic morbidity and mortality associated with influenza. In the great Spanish influenza epidemic of 1918 over 43,000 U.S. servicemen died of influenza. The German Chief of Staff, Eric von Ludendorff, cited influenza outbreaks towards the end of the World

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War I as a detriment to German Army success. All five DoD overseas medical research units participate in global influenza surveillance in conjunction with AFIERA (Air Force Institute for Environmental, Safety, and Occupational Health Risk Analysis), CDC, and WHO. The yield of this program has been notable. In the 2001-2002 and 2002-2003 influenza vaccines, the viral isolate for one of the three components (the Panama strain) originated from a DoD-GEIS surveillance specimen collected in Panama. The original selection by the FDA of another component, the New Caledonia strain, was heavily influenced by DoD's first isolation of this strain in the hemisphere by public health surveillance the Navy's Peru lab was conducting on Peruvian naval recruits. In this manner DoD-GEIS has benefited not only the Service personnel who receive this vaccine each year but also the tens of millions of other recipients. A strong influenza surveillance program is also valuable for bioterrorism surveillance since many agents in that group would initially present as influenza-like illnesses. Similarly, the recognition of new respiratory agents such as the agent of SARS is enhanced by global influenza surveillance.

Surveillance for drug-resistant malaria is also a focus of the DoD-GEIS overseas medical units. DoD has traditionally been a world leader in the development of antimalarial drugs and the overseas labs have been the backbone of the relevant clinical field trials needed to obtain licensure. DoD-GEIS funds the WHO Collaborating Center for Malaria Drug Development at the Walter Reed Army Institute of Research. Through DoD surveillance the distribution of drug-resistance can be tracked and methods of prophylaxis and treatment optimized. Similarly, diarrheal disease has historically been a major problem for military and other international travelers. The spread of antibiotic resistance has been rapid. Through structured surveillance DoD has been able to monitor these trends and optimize treatment approaches.

The greatest challenge for global infectious disease surveillance is dealing with the unexpected, especially when the unexpected is a new agent not previously described and for which specific laboratory tests are not available. Often these new agents are only recognized when the problem becomes distinctive enough that an astute clinician recognizes something unusual and is prepared to take public health action. Often and unfortunately, delays are an inherent part of this method of recognition and response. DoD-GEIS has endeavored to foster early detection through implementation at all of its overseas programs syndromic surveillance activities. In some cases individual patients who fit a specific syndromic pattern, for example fever with jaundice, are subjected to a predetermined algorithm of laboratory tests. In other cases, a broader, more rapid and affordable net is cast with the focus being on recognition of abnormal symptom patterns that manifest at the community level. For example, the NAMRU-2 lab in Indonesia has established an electronic syndromic disease network of networks called EWORS (Early Warning Outbreak and Recognition System). These networks are in Indonesia, Laos, Viet Nam, and Cambodia. The symptom patterns of patients presenting at sentinel clinical sites are captured in a standardized way and

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downloaded electronically each day to a centralized site for analysis through use of a specially developed software tool. Through this method NAMRU-2 has been able to detect or characterize numerous outbreaks of problems such as dengue hemorrhagic fever. The value of the EWORS approach has been appreciated by other governments such as those in Poland, Panama, and Peru that have asked for GEIS help as they try to establish similar mechanisms in their countries.

The Right Resources in the Right Place

DoD public health security builds on a strong cadre of preventive medicine and public health officers and personnel stationed at military installations across the globe who serve as our first line of defense in the identification and control of infectious diseases that may pose a risk to our Service members and our mission. These dedicated professionals constantly monitor the disease patterns in their local area, make notification when something seems awry, and implement measures to help control the situation. In most cases, the military preventionists work closely with their civilian counterparts at the local or state level to develop and implement control measures. The efforts of the local public health experts should not be discounted. Not only do they serve as the first-line of defense when an outbreak occurs, but they often identify a problem before electronic surveillance triggers are reached.

The Defense Medical Surveillance System is located at the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) and captures data from the MHS and other sources. It is unique, in that it links multiple military data bases, most notably the MHS, personnel, deployment, reportable disease, and serum repository systems. CHPPM manages EPICON, a rapid response cell that can mobilize to investigate any disease outbreak. CHPPM also has teaching materials for the prevention of medical illness and injury. As 9-10 individuals suffer from disease and non-battle injuries for every wounded soldier, sailor, airman, Marine, or Coast Guardsman, prevention of non-battle disease and injury is paramount to the success of any military mission. CHPPM (through the Deployment Environmental Surveillance Program), Air Force (through the Air Force Institute for Environmental, Safety, and Occupational Health Risk Analysis) and Navy (through the Navy Environmental Health Center) programs monitor environmental, bioweapon, industrial, and infectious disease threat analysis and mitigation.

An example of mobile environmental and clinical laboratory capability is provided by the DoD development of the Ruggedized Advanced Pathogen Identification Device (RAPID) to provide field commanders with portable, rapid, specific biological agent identification capability. This system identifies infectious agents in as little as 2 hours, enabling commanders and health care providers to make laboratory-based decisions that govern intervention and prevention in a timely manner. DoD has currently deployed nearly three hundred fifty of these \$60,000 units.

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The Armed Forces Institute of Pathology (AFIP) has one of the world's best laboratories for anatomic and microscopic pathology. AFIP works in concert with both DoD and civilian experts to analyze the histological patterns for any disease process, and it is a world-renowned pathologic reference facility. AFIP also manages the Office of the Armed Forces Medical Examiner, which monitors all military deaths and assures that appropriate autopsies are conducted to determine cause of death.

The Uniformed Services University of the Health Sciences (USUHS) operates Preventive/Occupational Medicine and Tropical Medicine Residencies and Fellowships, as well as public health training and research for medical and graduate students. Physicians from around the world study at the DoD medical university. USUHS participates in manning several of the remote laboratories that provide tropical disease information and research.

The Armed Forces Medical Intelligence Center (AFMIC) has both classified and unclassified information on the medical threats and health issues potentially facing our deployed forces anywhere in the world. This information includes endemic and epidemic disease occurrence, health care capabilities, disease and animal vectors, and pests and reptiles important to disease transmission. This center provides critical intelligence for unit medical planners to ensure that proper medical information and prophylactic medications are dispersed to deploying forces. This information is not only vital to medical planners, but it is also used by the military leadership of deploying forces in developing their risk assessments at all unit levels.

A National Role

Mr. Chairman, you'll be pleased to hear that DoD is a solid participant in a National Science Foundation-sponsored multi-agency working group¹ to develop the National strategy and vision for informatics systems for surveillance of infectious diseases and bioweapon use against humans, plants and animals. This agenda will recommend research priorities for development, integration, and coordination of disparate data systems to give decision makers at all levels timely, accurate and dependable surveillance information.

ESSENCE and Syndromic Surveillance

Within the structure of the Military Health System GEIS program syndromic surveillance has also been a focus. In 1999 GEIS launched ESSENCE, the Electronic

¹ AFMIC (Armed Forces Military Intelligence Center), CDC (Centers for Disease Control and Prevention), CIA (Central Intelligence Agency), DoE (Department of Energy), DHHS (Department of Health and Human Services), DoT (Department of Transportation), NASA (National Air and Space Administration), NIH (National Institutes of Health), NIMA (National Imaging and Mapping Agency), NIST (National Institute of Standards and Technology), NOAA (National Oceanographic and Atmospheric Administration), NSA (National Security Agency), State Department, USDA (United States Department of Agriculture), USGS (United States Geological Survey)

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Surveillance System for the Early Notification of Community-based Epidemics. This effort, inspired by earlier work by the City of New York, initially sought to create for the National Capital Region a near real-time method for detecting unexpected changes in health. The means used were to capture electronically every day the ambulatory medical diagnoses issued by providers at over 100 DoD primary care clinics within 50 miles of the White House. The multiple public health jurisdictions in the National Capital Region made implementing such a system in the civilian sector much more of a challenge than was the case in the City of New York. Because DoD had in place a networked electronic medical information infrastructure, it was feasible to pilot such an initiative rapidly and at very low cost. Immediately following the events of September 11, 2001, it was possible to scale up the ESSENCE effort to involve daily capture of outpatient diagnoses from over 300 DoD medical treatment facilities around the world. The numerous diagnostic codes are reduced to several broad categories thought to point towards syndromes associated with naturally occurring outbreaks or bioterrorism.

Using historic data and mathematical methods, epidemiologic aberrations in temporal trends are sought and prioritized for alert. ESSENCE has been recognized as a leader in this new approach to public health surveillance. In recognition of this DARPA funded the creation of ESSENCE II, a civil-military operational research and development partnership involving GEIS, the Johns Hopkins University Applied Physics Lab, and other academic and corporate partners. The objective is to create for the National Capitol Region a more powerful tool for detecting and characterizing outbreaks as early as possible. In addition to tracking civilian and military health care system ambulatory data, the ESSENCE II consortium is evaluating complementary surveillance sources such as over the counter and DoD pharmacy data, nurse hotline data, and ICU data. The Defense Threat Reduction Agency and the DoD Program Executive Office for Chemical and Biological Defense have also provided funding to further improve and extend this enhanced model of surveillance to a test bed in Albuquerque, NM and to nine DoD installations.

In-Garrison Health Surveillance

DoD-GEIS has also focused on strengthening the key elements of the Defense Medical Surveillance program for the in-garrison health system. A key focus has been on laboratory based surveillance of respiratory diseases. The Air Force Institute for Environmental, Safety, and Occupational Health Risk Analysis and the Navy Health Research Center have expanded their respiratory disease public health laboratories. Through an annual tri-service meeting, the GEIS-supported work of these labs is coordinated to ensure that it is synergistic, as comprehensive as feasible, and cost-effective. AFIERA focuses on global surveillance of respiratory viruses especially on etiologic determination of agents causing disease. AFIERA receives specimens from Army and Navy overseas research units and numerous MHS laboratories around the world. AFIERA's valuable work is reflected in their featured

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role each year at the FDA meeting to select the annual influenza vaccine components. The NHRC laboratory focuses on population-based surveillance, especially in tri-service DoD training centers, for bacterial and viral respiratory diseases. This has allowed DoD to detect and characterize problems in basic training centers so that appropriate prophylaxis and other disease controls can be put into place rapidly. After the first Gulf War it was recognized that a weakness in DoD surveillance was the lack of rapid surveillance for cause of death. Through funding to the AFIP, GEIS has been able to establish an effective mortality surveillance system to ensure that all active duty deaths are fully documented and that unexplained deaths, potentially due to emerging infections, are rapidly investigated.

Value of Partnerships

DoD has always recognized that global surveillance is a goal we cannot achieve alone. Partnerships with WHO and its regional offices in other nations and the building of trust have been a key element of the DoD philosophy. Many countries, in confidence, have brought issues to the attention of GEIS and the overseas laboratories because they respected the integrity of the GEIS scientists, the spirit of collaboration, and the capabilities of the DoD network to produce high quality results rapidly. DoD-GEIS is a member of the WHO-led Global Outbreak Alert and Response Network or GOARN. As such it receives privileged information each week on significant public health events around the world. From time to time it is asked to support responses to these events such as the recent SARS outbreak. The integration of DoD-GEIS into these WHO-led responses is facilitated by having these elements awarded status as a WHO Collaborating Center. This multiyear process involves, in part, demonstrated international collaboration. Currently DoD supports WHO Collaborating Centers for Emerging Infections at NAMRU-2 and NAMRU-3. The other overseas labs are in the application process. U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) is also a WHO Collaborating Center for Viral Hemorrhagic Fevers with DoD-GEIS providing funding to the diagnostics laboratory.

To facilitate WHO-GEIS collaboration in the GOARN and in other venues, the Navy detailed a preventive medicine physician to WHO in June 2001. DoD provides the primary financial support to enable this officer to serve a vital civil-military liaison function at the WHO. Thus, most mornings we have at the table in Geneva, where emerging outbreaks are discussed, a DoD epidemiologist who can help focus DoD-GEIS resources towards important emerging global problems. During operations in Kosovo this was useful and most recently this has proven critical as we have faced the SARS crisis in the midst of the major deployment to the Middle East theater of operations. Through this office many valuable activities are developing including a NATO conference on influenza pandemic planning that was held in Saint Petersburg, Russia just a few days ago. The head of the AFIERA division that oversees GEIS influenza surveillance was partnered with a Russian scientist as co-sponsors.

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Partnerships with specific WHO regional offices have been a major focus of GEIS. A major focus here has been capacity building projects often focused around outbreak investigation training. Most of the overseas laboratories have found that the sponsorship of outbreak investigation training for host nation professionals is a useful way to add eyes and ears to the GEIS network and to build mutual trust and confidence. Doing this in conjunction with WHO further adds to the strengthening of the global network and the acceptance of DoD's role. The Combatant Commands have over the years seen that supporting GEIS-related humanitarian assistance projects is a valuable tool for engagement. Over the last five years the Southern Command humanitarian assistance program has funded GEIS to donate equipment and provide training to establish electronic laboratory networks for disease surveillance in over 20 countries of the Caribbean and Latin America. In this way the reach of DoD-GEIS has been extended well beyond traditional boundaries.

Military Health System Vaccine Program

Vaccines are important tools in protecting the health of the men and women who serve their nation in uniform. The biological threats may spread in a number of ways including person-to-person in recruit training, airborne transmission on the battlefield, through contaminated food or water, or from the bite of an infected mosquito during deployments. Vaccines provide a safe and effective means of countering the threats to personal health and military readiness. DoD uses a wide array of vaccines to help mitigate the impact of biological threats. These Vaccines prevent infections, such as tetanus, typhoid fever, measles, yellow fever, smallpox, and anthrax, to name just a few. The DoD Military Vaccine Agency serves to coordinate the use, risk communication and safety monitoring of vaccines both in garrison and in operational settings in an effort to keep units operationally ready and reduce the risks from disease.

In addition to effectively using available vaccines, DoD has an extensive research effort ongoing to develop new and better vaccines to protect our Service members. The United States Army Medical Research Institute of Infectious Diseases has a staff of 450 physicians, veterinarians, microbiologists, pathologists, chemists, molecular biologists, physiologists, and pharmacologists, and the technical and administrative staff necessary to support the research. Current studies include work on improved vaccines for anthrax, Venezuelan equine encephalitis, plague, and botulism, and on new vaccines for toxins such as staphylococcal enterotoxins and ricin. Research on medical countermeasures to viral hemorrhagic fevers and arboviral illnesses also is conducted.

Topical Response

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Response is a critical and challenging element of the DoD program. Over the last five years various elements of the DoD-GEIS network have supported responses such as those to outbreaks of Rift Valley Fever in Kenya and Yemen. SARS illustrates in perhaps the most comprehensive way the ranges of assets DoD-GEIS can coordinate and bring to bear on a problem. From the earliest days, having a DoD officer assigned to WHO headquarters has been of great value. As the complexity of the SARS situation grew, especially with the ongoing deployment, we found it advantageous to detail a DoD epidemiologist to the CDC SARS operations center in Atlanta. This individual has been a key point of coordination for numerous issues.

Though DoD has yet to register a “suspect” or “probable” case of SARS, much preparation has been accomplished. DoD and Service-specific clinical, diagnostic, disease control, and air evacuation guidance has been disseminated. PACOM has issued a directive on travel restrictions to East Asia. The existing infrastructure of the GEIS global, laboratory-based respiratory surveillance program was rapidly expanded to facilitate transport of acute respiratory disease specimens to capable laboratories. Through coordination with CENTCOM, new laboratory-based respiratory disease surveillance sites were established in Oman, the Kyrgyzstan Republic, Qatar, and Kuwait. These will provide surveillance for not only SARS but also all other respiratory agents in theater. AFIERA coordinated laboratory actions with CDC, provided instructions for specimen collection and shipment, and sent supplies to the new surveillance sites. Both AFIERA and NHRC are working with CDC to ensure optimal specimen processing and the implementation of appropriate assays as soon as they are available. A daily Executive Summary is issued by DoD-GEIS to communicate not only news with respect to general SARS issues but also specific DoD information on possible cases, policy guidance, reference laboratory resources, and surveillance data from ESSENCE and other DoD sources. CDC has recognized the extensive capabilities of USAMRIID to contribute to the national SARS response. USAMRIID assets are being used to evaluate the effectiveness in the laboratory of multiple antiviral drugs. With GEIS funding, the USAMRIID diagnostics laboratory is also developing and evaluating diagnostic methods for SARS. DoD vaccine experts have also been involved with early planning for the development of a vaccine against the causative agent. The overseas laboratories are well positioned to support the SARS response effort. NAMRU-2 in Jakarta has been somewhat compromised in this effort since it was largely evacuated after the Bali bombing last fall. State Department restrictions have curtailed movement of DoD officers remaining at the laboratory. Nevertheless, almost immediately after SARS was reported from Viet Nam, NAMRU-2 host national staff traveled to Viet Nam bringing to collaborators materials for specimen collection. NAMRU-2 has been designated by the Indonesian Ministry of Health as the “official” facilitator of laboratory diagnostics for SARS in Indonesia and has coordinated specimen handling protocols and testing with CDC. In this role it shipped specimens from nine “suspect” Indonesian patients to CDC on 9 April 2003. On 17 April 2003, NAMRU-2 sent additional specimens to CDC including one from Indonesia’s first “probable” case. It has established a network of

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20 referral hospitals from across Indonesia to ensure proper, safe management of specimens and relevant information. On 16 April 2003, it held a workshop for 40 SARS network participants. NAMRU-2 participates on the Indonesian National SARS Task Force and will establish in-country testing if proper safety conditions can be assured.

Conclusion

The Military Health System surveillance capability covers a wide-reaching, complex network of domestic and deployed programs which support clinical care and public health activities. The focus on prevention spans the career of Service members from accession beyond retirement and includes individual as well as population health initiatives.

DoD-GEIS is a tri-service program of DoD designed to make well-coordinated and efficient use of a wide range of complimentary assets for DoD emerging infections surveillance and response. It works closely with CDC, WHO and its regional offices, and many host country governmental and non-governmental entities. Value has been added in numerous ways to benefit not only the health of DoD personnel and other citizens but also to address a broad range of national security interests. DoD-GEIS has helped enhance control of influenza, improve medical threat assessments, guide DoD drug development, strengthen the capability for prompt detection of disease outbreaks including those due to bioterrorism, and reduce post-deployment importation of disease back to the U.S. Its initiatives have helped recognize emerging problems in training settings and validate methods of disease management. DoD-GEIS is well situated to continue serving as a vital partner in the federal consortium of partners dedicated to addressing the continuing threat of emerging infections.

I believe that you will find that our military health surveillance has many complementary and overarching systems that cooperate within DoD and the civilian medical community. These activities are enhanced through the DoD Global Emerging Infections Surveillance and Response System (DoD-GEIS).