

GAO

Testimony

Before the Committee on Veterans' Affairs, U.S. Senate

For Release on Delivery
Expected at 2:30 p.m.
Tuesday, October 16, 2001

VA AND DEFENSE
HEALTH CARE

Progress and Challenges
DOD Faces in Executing a
Military Medical
Surveillance System

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Mr. Chairman and Members of the Committee:

We are pleased to submit this statement for the record on the Department of Defense's (DOD) efforts to establish a medical surveillance system that enables DOD—along with the Department of Veterans Affairs (VA)—to respond to the health care needs of our military personnel and veterans. A medical surveillance system involves the ongoing collection and analysis of uniform information on deployments, environmental health threats, disease monitoring, medical assessments, and medical encounters. It is also important that this information be disseminated in a timely manner to military commanders, medical personnel, and others. DOD is responsible for developing and executing this system and needs this information to help ensure the deployment of healthy forces and the continued fitness of those forces. VA also needs this information to fulfill its missions of providing health care to veterans, backing up DOD in contingencies, and adjudicating veterans' claims for service-connected disabilities. Scientists at VA, DOD, and other organizations also use this information to conduct epidemiological studies and research.¹

Given our current military actions responding to the events of September 11, you asked us to describe the challenges DOD faces in establishing a reliable medical surveillance system, based on what has been reported about DOD's medical surveillance activities during the Gulf War and Operation Joint Endeavor.² This statement focuses on reports GAO,³ the Institute of Medicine (IOM), the Presidential Advisory Committee on Gulf War Veterans' Illnesses,⁴ and others have issued over the past several years. This statement is also based on interviews we held over the past 2

¹Epidemiology is the scientific study of the incidence, distribution, and control of disease in a population.

²United States and allied nations deployed peacekeeping forces to Bosnia beginning in December 1995 in support of Operation Joint Endeavor, the NATO-led Bosnian peacekeeping force.

³See list of related GAO products at the end of this statement.

⁴The President established this committee in May 1995 to conduct independent, open, and comprehensive examinations of health care concerns related to Gulf War service. The committee consisted of physicians, scientists, and Gulf War veterans.

weeks with various Defense Health Program officials, including officials from the Army Surgeon General's Office.⁵

In summary, GAO, the Institute of Medicine, and others have reported extensively on weaknesses in DOD's medical surveillance capability and performance during the Gulf War and Operation Joint Endeavor and the challenges DOD faces in implementing a reliable medical surveillance system. Investigations into the unexplained illnesses of Gulf War veterans uncovered many deficiencies in DOD's ability to collect, maintain, and transfer accurate data describing the movement of troops, potential exposures to health risks, and medical incidents during deployment. DOD improved its medical surveillance system under Operation Joint Endeavor, which provided useful information to military commanders and medical personnel. However, we and others reported a number of problems with this system. For example, information related to service members' health and deployment status—data critical to an effective medical surveillance system—was incomplete or inaccurate. DOD's numerous databases, including those that capture health information, are currently not linked, which further challenges the department's efforts to establish a single, comprehensive electronic system to document, archive, and access medical surveillance data.

DOD has several initiatives under way to improve the reliability of deployment information and to enhance its information technology capabilities, as we and others have recommended, though some initiatives are several years away from full implementation. Nonetheless, these efforts reflect a commitment by DOD to establish a comprehensive medical surveillance system. The ability of VA to fulfill its role in serving veterans and providing backup to DOD in times of war will be enhanced as DOD increases its medical surveillance capability.

Background

An effective military medical surveillance system needs to collect reliable information on (1) the health care provided to service members before, during, and after deployment; (2) where and when service members were deployed; (3) environmental and occupational health threats or exposures during deployment (in theater) and appropriate protective and counter measures; and (4) baseline health status and subsequent health changes.

⁵The Secretary of the Army is responsible for medical surveillance for DOD deployments, consistent with DOD's medical surveillance policy.

This information is needed to monitor the overall health condition of deployed troops, inform them of potential health risks, as well as maintain and improve the health of service members and veterans.

In times of conflict, a military medical surveillance system is particularly critical to ensure the deployment of a fit and healthy force and to prevent disease and injuries from degrading force capabilities. DOD needs reliable medical surveillance data to determine who is fit for deployment; to prepare service members for deployment, including providing vaccinations to protect against possible exposure to environmental and biological threats; and to treat physical and psychological conditions that resulted from deployment. DOD also uses this information to develop educational measures for service members and medical personnel to ensure that service members receive appropriate care.

Reliable medical surveillance information is also critical for VA to carry out its missions. In addition to VA's better known missions—to provide health care and benefits to veterans and medical research and education—VA has a fourth mission: to provide medical backup to DOD in times of war and civilian health care backup in the event of disasters producing mass casualties. As such, VA needs reliable medical surveillance data from DOD to treat casualties of military conflicts, provide health care to veterans who have left active duty, assist in conducting research should troops be exposed to environmental or occupational hazards, and identify service-connected disabilities and adjudicate veterans' disability claims.

Medical Recordkeeping and Surveillance During the Gulf War Was Lacking

Investigations into the unexplained illnesses of service members and veterans who had been deployed to the Gulf uncovered the need for DOD to implement an effective medical surveillance system to obtain comprehensive medical data on deployed service members, including Reservists and National Guardsmen. Epidemiological and health outcome studies to determine the causes of these illnesses have been hampered due to incomplete baseline health data on Gulf War veterans, their potential exposure to environmental health hazards, and specific health data on care provided before, during, and after deployment. The Presidential Advisory Committee on Gulf War Veterans' Illnesses' and IOM's 1996 investigations into the causes of illnesses experienced by Gulf War

veterans confirmed the need for more effective medical surveillance capabilities.⁶

The National Science and Technology Council, as tasked by the Presidential Advisory Committee, also assessed the medical surveillance system for deployed service members. In 1998, the council reported that inaccurate recordkeeping made it extremely difficult to get a clear picture of what risk factors might be responsible for Gulf War illnesses.⁷ It also reported that without reliable deployment and health assessment information, it was difficult to ensure that veterans' service-related benefits claims were adjudicated appropriately. The council concluded that the Gulf War exposed many deficiencies in the ability to collect, maintain, and transfer accurate data describing the movement of troops, potential exposures to health risks, and medical incidents in theater. The council reported that the government's recordkeeping capabilities were not designed to track troop and asset movements to the degree needed to determine who might have been exposed to any given environmental or wartime health hazard. The council also reported major deficiencies in health risk communications, including not adequately informing service members of the risks associated with countermeasures such as vaccines. Without this information, service members may not recognize potential side effects of these countermeasures and promptly take precautionary actions, including seeking medical care.

⁶*Health Consequences of Service During the Persian Gulf War: Recommendations for Research and Information Systems*, Institute of Medicine, Medical Follow-up Agency (Washington, D.C.: National Academy Press, 1996); *Presidential Advisory Committee on Gulf War Veterans' Illnesses: Interim Report* (Washington, D.C.: U.S. Government Printing Office, Feb. 1996); *Presidential Advisory Committee on Gulf War Veterans' Illnesses: Final Report* (Washington, D.C.: U.S. Government Printing Office, Dec. 1996).

⁷*National Science and Technology Council Presidential Review Directive 5* (Washington, D.C.: Executive Office of the President, Office of Science and Technology Policy, Aug. 1998).

Medical Surveillance Under Operation Joint Endeavor Improved But Was Not Comprehensive

In response to these reports, DOD strengthened its medical surveillance system under Operation Joint Endeavor when service members were deployed to Bosnia-Herzegovina, Croatia, and Hungary. In addition to implementing departmentwide medical surveillance policies, DOD developed specific medical surveillance programs to improve monitoring and tracking environmental and biomedical threats in theater. While these efforts represented important steps, a number of deficiencies remained.

On the positive side, the Assistant Secretary of Defense (Health Affairs) issued a health surveillance policy for troops deploying to Bosnia.⁸ This guidance stressed the need to (1) identify health threats in theater, (2) routinely and uniformly collect and analyze information relevant to troop health, and (3) disseminate this information in a timely manner. DOD required medical units to develop weekly reports on the incidence rates of major categories of diseases and injuries during all deployments. Data from these reports showed theaterwide illness and injury trends so that preventive measures could be identified and forwarded to the theater medical command regarding abnormal trends or actions that should be taken.

DOD also established the U.S. Army Center for Health Promotion and Preventive Medicine—a major enhancement to DOD’s ability to perform environmental monitoring and tracking. For example, the center operates and maintains a repository of service members’ serum samples for medical surveillance and a system to integrate, analyze, and report data from multiple sources relevant to the health and readiness of military personnel. This capability was augmented with the establishment of the 520th Theater Army Medical Laboratory—a deployable public health laboratory for providing environmental sampling and analysis in theater. The sampling results can be used to identify specific preventive measures and safeguards to be taken to protect troops from harmful exposures and to develop procedures to treat anyone exposed to health hazards. During Operation Joint Endeavor, this laboratory was used in Tuzla, Bosnia, where most of the U.S. forces were located, to conduct air, water, soil, and other environmental monitoring.

Despite the department’s progress, we and others have reported on DOD’s implementation difficulties during Operation Joint Endeavor and the

⁸Health Affairs Policy 96-019 (DOD Assistant Secretary of Defense Memorandum, Jan. 4, 1996).

shortcomings in DOD's ability to maintain reliable health information on service members. Knowledge of who is deployed and their whereabouts is critical for identifying individuals who may have been exposed to health hazards while deployed. However, in May 1997, we reported that the inaccurate information on who was deployed and where and when they were deployed—a problem during the Gulf War—continued to be a concern during Operation Joint Endeavor.⁹ For example, we found that the Defense Manpower Data Center (DMDC) database—where military services are required to report deployment information—did not include records for at least 200 Navy service members who were deployed. Conversely, the DMDC database included Air Force personnel who were never actually deployed. In addition, we reported that DOD had not developed a system for tracking the movement of service members within theater. IOM also reported that the location of service members during the deployments were still not systematically documented or archived for future use.¹⁰

We also reported in May 1997 that for the more than 600 Army personnel whose medical records we reviewed, DOD's centralized database for postdeployment medical assessments did not capture 12 percent of those assessments conducted in theater and 52 percent of those conducted after returning home.¹¹ These data are needed by epidemiologists and other researchers to assess at an aggregate level the changes that have occurred between service members' pre- and postdeployment health assessments. Further, many service members' medical records did not include complete information on in-theater postdeployment medical assessments that had been conducted. The Army's European Surgeon General attributed missing in-theater health information to DOD's policy of having service members hand carry paper assessment forms from the theater to their home units,

⁹*Defense Health Care: Medical Surveillance Improved Since Gulf War, but Mixed Results in Bosnia* (GAO/NSIAD-97-136, May 13, 1997).

¹⁰See *Institute of Medicine, Protecting Those Who Serve: Strategies to Protect the Health of Deployed U.S. Forces* (Washington, D.C., National Academy Press, 2000).

¹¹In many cases, we found that these assessments were not conducted in a timely manner or were not conducted at all. For example, of the 618 personnel whose records we reviewed, 24 percent did not receive in-theater postdeployment medical assessments and 21 percent did not receive home station postdeployment medical assessments. Of those who did receive home station postdeployment medical assessments, the assessments were on average conducted nearly 100 days after they left theater—instead of within 30 days, as DOD requires.

where their permanent medical records were maintained. The assessments were frequently lost en route.

We have also reported that not all medical encounters in theater were being recorded in individual records. Our 1997 report identified that this problem was particularly common for immunizations given in theater. Detailed data on service members' vaccine history are vital for scheduling the regimen of vaccinations and boosters and for tracking individuals who received vaccinations from a specific lot in the event health concerns about the vaccine lot emerge. We found that almost one-fourth of the service members' medical records that we reviewed did not document the fact that they had received a vaccine for tick-borne encephalitis. In addition, in its 2000 report, IOM cited limited progress in medical recordkeeping for deployed active duty and reserve forces and emphasized the need for records of immunizations to be included in individual medical records.

Current Policies and Programs Not Fully Implemented

Responding to our and others' recommendations to improve information on service members' deployments, in-theater medical encounters, and immunizations, DOD has continued to revise and expand its policies relating to medical surveillance, and the system continues to evolve. In addition, in 2000, DOD released its Force Health Protection plan, which presents its vision for protecting deployed forces.¹² This vision emphasizes force fitness and health preparedness and improving the monitoring and surveillance of health threats in military operations. However, IOM criticized DOD's progress in implementing its medical surveillance program and the failure to implement several recommendations that IOM had made. In addition, IOM raised concerns about DOD's ability to achieve the vision outlined in the Force Health Protection plan. We have also reported that some of DOD's programs designed to improve medical surveillance have not been fully implemented.

Recent IOM Report Concludes Slow Progress by DOD in Implementing Recommendations

IOM's 2000 report presented the results of its assessment of DOD's progress in implementing recommendations for improving medical surveillance made by IOM and several others. IOM stated that, although DOD generally concurred with the findings of these groups, DOD had made few concrete changes at the field level. For example, medical

¹²Joint Staff, Medical Readiness Division, *Force Health Protection* (2000).

encounters in theater were still not always recorded in individuals' medical records, and the locations of service members during deployments were still not systematically documented or archived for future use. In addition, environmental and medical hazards were not yet well integrated in the information provided to commanders.

The IOM report notes that a major reason for this lack of progress is no single authority within DOD has been assigned responsibility for the implementation of the recommendations and plans. IOM said that because of the complexity of the tasks involved and the overlapping areas of responsibility involved, the single authority must rest with the Secretary of Defense.

In its report, IOM describes six strategies that in its view demand further emphasis and require greater efforts by DOD:

- Use a systematic process to prospectively evaluate non-battle-related risks associated with the activities and settings of deployments.
- Collect and manage environmental data and personnel location, biological samples, and activity data to facilitate analysis of deployment exposures and to support clinical care and public health activities.
- Develop the risk assessment, risk management, and risk communications skills of military leaders at all levels.
- Accelerate implementation of a health surveillance system that completely spans an individual's time in service.
- Implement strategies to address medically unexplained symptoms in populations that have deployed.
- Implement a joint computerized patient record and other automated recordkeeping that meets the information needs of those involved with individual care and military public health.

Our Work Also Indicates Some DOD Programs for Improving Medical Surveillance Are Not Fully Implemented

DOD guidance established requirements for recording and tracking vaccinations and automating medical records for archiving and recalling medical encounters. While our work indicates that DOD has made some progress in improving its immunization information, the department faces numerous challenges in implementing an automated medical record.

In October 1999, we reported that DOD's Vaccine Adverse Event Reporting System, which relies on medical personnel or service members to provide

needed vaccine data, may not have included information on adverse reactions because DOD did not adequately inform personnel on how to provide this information.¹³

Additionally, in April 2000, we testified that vaccination data were not consistently recorded in paper records and in a central database, as DOD requires.¹⁴ For example, when comparing records from the database with paper records at four military installations, we found that information on the number of vaccinations given to service members, the dates of the vaccinations, and the vaccine lot numbers were inconsistent at all four installations. At one installation, the database and records did not agree 78 to 92 percent of the time. DOD has begun to make progress in implementing our recommendations, including ensuring timely and accurate data in its immunization tracking system.

The Gulf War revealed the need to have information technology play a bigger role in medical surveillance to ensure that the information is readily accessible to DOD and VA. In August 1997, DOD established requirements that called for the use of innovative technology, such as an automated medical record device for documenting inpatient and outpatient encounters in all settings and that can archive the information for local recall and format it for an injury, illness, and exposure surveillance database.¹⁵ Also, in 1997, the President, responding to deficiencies in DOD's and VA's data capabilities for handling service members' health information, called for the two agencies to start developing a comprehensive, lifelong medical record for each service member. As we reported in April 2001, DOD's and VA's numerous databases and electronic systems for capturing mission-critical data, including health information, are not linked and information cannot be readily shared.¹⁶

DOD has several initiatives under way to link many of its information systems—some with VA. For example, in an effort to create a

¹³*Medical Readiness: DOD Faces Challenges in Implementing Its Anthrax Vaccine Immunization Program* (GAO/NSIAD-00-36, Oct. 22, 1999).

¹⁴*Medical Readiness: DOD Continues to Face Challenges in Implementing Its Anthrax Vaccine Immunization Program* (GAO/T-NSIAD-00-157, Apr. 13, 2000).

¹⁵DOD Directive 6490.2, "Joint Medical Surveillance" (Aug. 30, 1997).

¹⁶*Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing* (GAO-01-459, Apr. 30, 2001).

comprehensive, lifelong medical record for service members and veterans and to allow health care professionals to share clinical information, DOD and VA, along with the Indian Health Service (IHS),¹⁷ initiated the Government Computer-Based Patient Record (GCPR) project in 1998. GCPR is seen as yielding a number of potential benefits, including improved research and quality of care, and clinical and administrative efficiencies. However, our April 2001 report describes several factors—including planning weaknesses, competing priorities, and inadequate accountability—that made it unlikely that DOD and VA would accomplish GCPR or realize its benefits in the near future. To strengthen the management and oversight of GCPR, we made several recommendations, including designating a lead entity with a clear line of authority for the project and creating comprehensive and coordinated plans for sharing meaningful, accurate, and secure patient health data.

For the near term, DOD and VA have decided to reconsider their approach to GCPR and focus on allowing VA to view DOD health data. However, under the interim effort, physicians at military medical facilities will not be able to view health information from other facilities or from VA—now a potentially critical information source given VA’s fourth mission to provide medical backup to the military health system in times of national emergency and war.

Recent meetings with officials from the Defense Health Program and the Army Surgeon General’s Office indicate that the department is working on issues we have reported on in the past, including the need to improve the reliability of deployment information and the need to integrate disparate health information systems. Specifically, these officials informed us that DOD is in the process of developing a more accurate roster of deployed service members and enhancing its information technology capabilities. For example, DOD’s Theater Medical Information Program (TMIP) is intended to capture medical information on deployed personnel and link it with medical information captured in the department’s new medical information system, now being field tested.¹⁸ Developmental testing for

¹⁷IHS was included in the effort because of its population-based research expertise and its long-standing relationship with VA.

¹⁸Composite Health Care System II (CHCS II) is expected to capture information on immunizations; allergies; outpatient encounters, such as diagnostic and treatment codes; patient hospital admission and discharge; patient medications; laboratory results; and radiology. CHCS II is expected to support best business practices, medical surveillance, and clinical research.

TMIP is about to begin and field testing is expected to begin next spring, with deployment expected in 2003. A component system of TMIP—Transportation Command Regulating and Command and Control Evacuation System—is also under development and aims to allow casualty tracking and provide in-transit visibility of casualties during wartime and peacetime. Also under development is the Global Expeditionary Medical System, which DOD characterizes as a stepping stone to an integrated biohazard surveillance and detection system.

Concluding Observations

Clearly, the need for comprehensive health information on service members and veterans is very great, and much more needs to be done. However, it is also a very difficult task because of uncertainties about what conditions may exist in a deployed setting, such as potential military conflicts, environmental hazards, and frequency of troop movements. While progress is being made, DOD will need to continue to make a concerted effort to resolve the remaining deficiencies in its surveillance system. Until such a time that some of the deficiencies are overcome, VA's ability to perform its missions will be affected.

Contact and Acknowledgments

For further information, please contact Stephen P. Backhus at (202) 512-7101. Individuals making key contributions to this testimony included Ann Calvaresi Barr, Karen Sloan, and Keith Steck.

Related GAO Products

Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing ([GAO-01-459](#), Apr. 30, 2001).

Medical Readiness: DOD Continues to Face Challenges in Implementing Its Anthrax Vaccine Immunization Program ([GAO/T-NSIAD-00-157](#), Apr. 13, 2000).

Medical Readiness: DOD Faces Challenges in Implementing Its Anthrax Vaccine Immunization Program ([GAO/NSIAD-00-36](#), Oct. 22, 1999).

Chemical and Biological Defense: Observations on DOD's Plans to Protect U.S. Forces ([GAO/T-NSIAD-98-83](#), Mar. 17, 1998).

Gulf War Veterans: Incidence of Tumors Cannot Be Reliably Determined From Available Data ([GAO/NSIAD-98-89](#), Mar. 3, 1998).

Gulf War Illnesses: Federal Research Strategy Needs Reexamination ([GAO-T-NSIAD-98-104](#), Feb. 24, 1998).

Gulf War Illnesses: Research, Clinical Monitoring, and Medical Surveillance ([GAO/T-NSIAD-98-88](#), Feb. 5, 1998).

Defense Health Care: Medical Surveillance Improved Since Gulf War, but Mixed Results in Bosnia ([GAO/NSIAD-97-136](#), May 13, 1997).

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