



Testimony

Before the Presidential Advisory Committee on Gulf War Veterans' Illnesses

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CHEMICAL AND BIOLOGICAL DEFENSE

Emphasis Remains Insufficient to Resolve Continuing Problems

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Madam Chairwoman and Members of the Committee:

We appreciate the opportunity to provide our assessment of the capability of U.S. forces to fight and survive while under attack by chemical and biological agents. Our work did not specifically address the veteran's Gulf War illness issue; however, we did address some issues common to those contained in your February 15, 1996, interim report such as inadequate detection equipment, and problems of transitioning from Investigational New Drug vaccine status to Food and Drug Administration approved vaccines.

As you know, during the Persian Gulf Conflict (1) many units arrived in the Persian Gulf without needed protective equipment and adequate training, (2) plans to vaccinate personnel to protect them from the effects of biological agents were inadequate, and (3) medical units lacked the ability to treat casualties in a chemically or biologically contaminated environment. U.S. forces would have been highly vulnerable to chemical or biological attack had they not had 6 months after arrival in the Gulf to deal with these shortcomings before offensive operations began.

Today U.S. forces face a continually increasing threat of chemical and biological warfare. A steadily increasing number of potential enemies now possess the technologies and capabilities to produce and deliver a wide range of chemical and biological agents. Although the Department of Defense (DOD) is taking steps to improve the readiness of U.S. ground forces to conduct operations in a chemical or biological environment, units designated for early deployment today face many of the same problems that were experienced during the Persian Gulf Conflict in 1990 and 1991. U.S. forces still lack the ability to defend adequately against chemical and/or biological agents and a degraded war-fighting capability could still result from persistent equipment, training, and medical shortcomings.

This situation is a result of the inconsistent but generally lower priority DOD—especially the Joint Chiefs of Staff (JCS) and the war-fighting Commanders in Chief (CINC)—assigns chemical and biological defense compared to other high priority activities, such as performing traditional operational mission tasks. This is evidenced by the limited funding, staffing, and mission priority chemical and biological defense activities receive. Shortcomings in chemical and biological defense are likely to continue unless the Secretary of Defense and the JCS Chairman specifically assign a higher priority to this area. DOD has spent less than 1 percent of its

budget on chemical and biological warfare defense, and over the period 1992-1995, funding in real terms decreased by 30 percent. Our work gives us no reason to expect DOD to place greater emphasis on this area in the future. The salient details on past and present problems in the U.S. defense against chemical and biological warfare are discussed below.

Early-Deploying Units Lack Required Equipment

Shortages of chemical and biological defense equipment are a long-standing problem. After the Persian Gulf Conflict, the Army changed its regulations in an attempt to ensure that early-deploying units would have sufficient equipment on hand upon deployment. This direction, contained in U.S. Forces Command Regulation 700-2, has not been universally implemented. Neither the Army's more than five active divisions composing the crisis response force nor the early-deploying Army reserve units we visited had complied with the new stocking level requirements. All had shortages of critical equipment; three of the more than five active divisions had 50 percent or greater shortages of protective suits, and shortages of other critical items were as high as 84 percent, depending on the unit and the item. This equipment is normally procured with operation and maintenance funds.

These shortages occurred primarily because unit commanders consistently diverted operation and maintenance funds to meet what they considered higher priority requirements, such as base operating costs, quality-of-life considerations, and costs associated with other-than-war deployments such as those to Haiti and Somalia. Relative to the DOD budget, the cost of purchasing this protective equipment is low. Early-deploying active divisions in the continental United States could meet current stocking requirements for an additional cost of about \$15 million. However, unless funds are specifically designated for chemical and biological defense equipment, we do not believe unit commanders will spend operation and maintenance funds for this purpose. The shortages of on-hand stock are exacerbated by inadequate installation warehouse space for equipment storage, poor inventorying and reordering techniques, shelf-life limitations, and difficulty in maintaining appropriate protective clothing sizes. The Army is presently considering several actions to improve these conditions.

Progress in Research and Development Is Slower Than Planned

New and improved equipment for chemical and biological defense is needed to overcome some shortfalls, and DOD is having difficulty meeting all of its planned chemical and biological defense research goals. Efforts to improve the management of the materiel development and acquisition

process have so far had limited results and will not attain their full effect until at least fiscal year 1998.

In response to lessons learned in the Persian Gulf Conflict, Congress directed DOD to improve the coordination of chemical and biological doctrine, requirements, research, development, and acquisition among DOD and the military services.¹ DOD has acted. During 1994 and 1995, it established the Joint Service Integration Group to prioritize chemical and biological defense research efforts and develop a modernization plan; and the Joint Service Materiel Group to develop research, development, acquisition, and logistics support plans. The activities of these two groups are overseen by a single DOD office—the Assistant Secretary of Defense for Nuclear, Biological, and Chemical Warfare Defense.

While these groups have begun to implement the congressional requirements of P.L. 103-160, progress has been slower than expected. At the time of our review, the Joint Service Integration Group expected to produce during 1996 its proposed (1) list of chemical and biological defense research priorities and (2) joint service modernization plan and operational strategy. The Joint Service Materiel Group expects to deliver its proposed plan to guide chemical and biological defense research, development, and acquisition in October 1996. Consolidated research and modernization plans are important for avoiding duplication among the services and otherwise achieving the most effective use of limited resources. It is unclear whether or when DOD will approve these plans. However, DOD officials acknowledged that it will be fiscal year 1998 at the earliest, about 5 years after the law was passed, before DOD can begin formal budgetary implementation of these plans. DOD officials told us progress by these groups has been adversely affected by personnel shortages and collateral duties assigned to the staff.

DOD efforts to field specific equipment and conduct research to address chemical and biological defense deficiencies have produced mixed results. On the positive side, DOD began to field the Biological Integrated Detection System in January 1996 and expects to complete the initial purchase of 38 systems by September 1996. However, DOD has not succeeded in fielding other needed equipment and systems designed to address critical battlefield deficiencies identified during the Persian Gulf Conflict and earlier. For example, work initiated in 1978 to develop an Automatic Chemical Agent Alarm to provide visual, audio, and command-communicated warnings of chemical agents remains

¹The National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, November 30, 1993.

incomplete. Due to budget constraints, DOD has approved and acquired only 103 of the more than 200 FOX mobile reconnaissance systems originally planned. Of the 11 chemical and biological defense research goals listed in DOD's 1995 Annual Report to the Congress, DOD met 5 by their expected completion date of January 1996. Some were not met. For example, a DOD attempt to develop a less corrosive and labor-intensive decontaminate solution is now not expected to be completed until 2002.

Army and Marine Forces Are Inadequately Trained for Chemical/Biological Defense

Chemical and biological defense training at all levels has been a constant problem for many years. For example, in 1986, DOD studies found that its forces were inadequately trained to conduct critical tasks. It took 6 months during the Persian Gulf Conflict to prepare forces in theater to defend against chemical and biological agents. However, these skills declined again after this conflict. A 1993 Army Chemical School study found that a combined arms force of infantry, artillery, and support units would have extreme difficulty performing its mission and suffer needless casualties if forced to operate in a chemical or biological environment because the force was only marginally trained.

Army studies conducted from 1991 to 1995 showed serious weaknesses at all levels in chemical and biological defense skills. Our analysis of Army readiness evaluations, trend data, and lessons learned reports from this period also showed individuals, units, and commanders alike had problems performing basic tasks critical to surviving and operating in a chemical or biological environment. Despite DOD efforts—such as doctrinal changes and command directives—designed to improve training in defense against chemical and biological warfare since the Persian Gulf Conflict, U.S. forces continue to experience serious weaknesses in (1) donning protective masks, (2) deploying detection equipment, (3) providing medical care, (4) planning for the evacuation of casualties, and (5) including chemical and biological issues in operational plans. The Marine Corps also continues to experience similar problems.

In addition to individual service training problems, the ability of joint forces to operate in a contaminated environment is questionable. In 1995, only 10 percent of the joint exercises conducted by four major CINCS included training to defend against chemical and biological agents. None of this training included all 23 required chemical/biological training tasks, and the majority included less than half of these tasks. Furthermore, these CINCS plan to include chemical/biological training in only 15 percent of the joint exercises for 1996. This clearly demonstrates the lack of chemical

and biological warfare training at the joint service level. There are two fundamental reasons for this. First, CINCS generally consider chemical and biological training and preparedness to be the responsibility of the individual services. Second, CINCS believe that chemical and biological defense training is a low priority relative to their other needs.

Medical Units Lack Equipment and Training

We examined the ability of U.S. Army medical units that support early-deploying Army divisions to treat casualties in a chemically and biologically contaminated environment. We found that these units often lacked needed equipment and training. Had Iraq actually employed chemical and/or biological agents during the Persian Gulf Conflict, the military's ability to deal with subsequent casualties would have been severely impaired at best.

Lack of Equipment

Medical units supporting early-deploying Army divisions we visited often lacked critical equipment needed to treat casualties in a chemically or biologically contaminated environment. For example, these units had only about 50 to 60 percent of their authorized patient treatment and decontamination kits. Some of the patient treatment kits on hand were missing critical items such as drugs used to treat casualties. Also, none of the units had any type of collective shelter in which to treat casualties in a contaminated environment. Army officials acknowledged that the inability to provide treatment in the forward area of battle would result in greater rates of injury and death. Old versions of collective shelters are unsuitable, unserviceable, and no longer in use; new shelters are not expected to be available until fiscal year 1997 at the earliest.

Lack of Training

Few Army physicians in the units we visited had received formal training on chemical and biological patient treatment beyond that provided by the Basic Medical Officer course. Further instruction on chemical and biological patient treatment is provided by the medical advanced course and the chemical and biological casualty management course. The latter course provides 6-1/2 days of classroom and field instruction needed to save lives, minimize injury, and conserve fighting strength in a chemical or biological warfare environment. During the Persian Gulf Conflict, this course was provided on an emergency basis to medical units already deployed to the Gulf. In 1995, 47 to 81 percent of Army physicians assigned to early-deploying units had not attended the medical advanced course, and 70 to 97 percent had not attended the casualty management course.

Both the advanced and casualty management courses are optional, and according to Army medical officials, peacetime demands to provide care to service members and their dependents often prevented attendance. Also, the Army does not monitor those who attend the casualty management course, nor does it target this course toward those who need it most, such as those assigned to early-deploying units.

Vaccine Stocks and Immunization Plans

Today, DOD still has inadequate stocks of vaccines for known threat agents, and so far has chosen not to implement existing immunization policy and procedures. DOD's program to vaccinate U.S. forces to protect them against biological agents will not be fully effective until these problems are resolved.

Though DOD has identified which biological agents are critical threats and determined the amount of vaccines that should be stocked, we found that the amount of vaccines stocked remains insufficient to protect U.S. forces, as it was during the Persian Gulf Conflict. Problems also exist with regard to the vaccines available to DOD. Only a few biological agent vaccines have been approved by the Food and Drug Administration (FDA). Many remain in Investigational New Drug (IND) status. Although IND vaccines have long been safely administered to personnel working in DOD vaccine research and development programs, the FDA usually requires large-scale field trials in humans to demonstrate new drug safety and effectiveness before approval. DOD has not performed such field trials due to ethical and legal considerations. DOD officials said that they hoped to acquire a prime contractor during 1996 to subcontract vaccine production and do what is needed to obtain FDA approval of vaccines currently under investigation.

Since the Persian Gulf Conflict, DOD has consolidated the funding and management of several biological warfare defense activities, including vaccines, under the new Joint Program Office for Biological Defense. A 1993 DOD Directive established the policy, procedures, and responsibilities for stockpiling biological agent vaccines and inoculating service members assigned to high-threat areas or to early-deploying units before deployment. The JCS and other high-ranking DOD officials have not yet approved implementation of this immunization policy. The draft policy implementation plan is completed and is currently under review within DOD. However, this issue is highly controversial within DOD, and whether the implementation plan will be approved and carried out is unclear. Until that happens, service members in high-threat areas or designated for early

deployment in a crisis will not be protected by approved vaccines against biological agents.

Problems Stem From Lack of Emphasis on Preparation for Chemical/ Biological Warfare

The primary cause for the deficiencies in chemical and biological defense preparedness is a lack of emphasis up and down the line of command in DOD. In the final analysis, it is a matter of commanders' military judgment to decide the relative significance of risks and to apply resources to counter those risks that the commander finds most compelling. DOD has decided to concentrate on other priorities and consequently to accept a greater risk regarding preparedness for operations on a contaminated battlefield.

Funding

Chemical and biological defense funding allocations are being targeted by the Joint Staff and DOD for reduction in attempts to fund other, higher priority programs. DOD allocates less than 1 percent of its total budget to chemical and biological defense. Annual funding for this area has decreased by over 30 percent in constant dollars since fiscal year 1992, from approximately \$750 million in that fiscal year to \$504 million in 1995. This reduction has occurred in spite of the current U.S. intelligence assessment that the chemical and biological warfare threat to U.S. forces is increasing and the importance of defending against the use of such agents in the changing worldwide military environment.

Funding could decrease even further. On October 26, 1995, the Joint Requirements Oversight Council and the JCS Chairman proposed to the Office of the Secretary of Defense (OSD) a cut of \$200 million for each of the next 5 years (\$1 billion total) to the counterproliferation budget. The counterproliferation program element in the DOD budget includes funding for the joint nuclear, chemical, and biological defense program as well as vaccine procurement and other related counterproliferation support activities. If implemented, this cut would severely impair planned chemical and biological defense research and development efforts and reverse the progress that has been made in several areas, according to DOD sources. A final \$800 million cut over 5 years was recommended to the Secretary of Defense. On March 7, 1996, we were told that DOD was now considering a proposed funding reduction of \$33 million. In January 1996, the Deputy Secretary of Defense requested a DOD Program Analysis and Evaluation study on counterproliferation support programs. The study is expected to be completed by the end of June 1996.

Staffing and Monitoring

The battle staff chemical officer/chemical noncommissioned officers are a commander's principal trainers and advisers on chemical and biological defense operations and equipment operations and maintenance. We found that chemical and biological officer staff positions are being eliminated and that when filled, staff officers occupying the position are frequently assigned collateral tasks that reduce the time available to manage chemical and biological defense activities. At U.S. Army Forces Command and U.S. Army III Corps headquarters, for example, chemical staff positions are being reduced. Also, DOD officials told us that the Joint Service Integration and Joint Service Materiel Groups have made limited progress largely because not enough personnel are assigned to them and collateral duties are assigned to the staff. We also found that chemical officers assigned to a CINC's staff were frequently tasked with duties not related to chemical and biological defense.

The lower emphasis given to chemical and biological matters is also demonstrated by weaknesses in the methods used to monitor their status. DOD's current system for reporting readiness to the Joint Staff is the Status of Resources and Training System (SORTS). We found that the effectiveness of SORTS for evaluating unit chemical and biological defense readiness is limited largely because (1) it allows commanders to be subjective in their evaluations, (2) it allows commanders to determine for themselves which equipment is critical, and (3) reporting remains optional at the division level. We also found that after-action and lessons learned reports and operational readiness evaluations were limited in their effectiveness for accurately assessing unit chemical and biological defense status. At the U.S. Army Reserve Command there is no chemical or biological defense staff position. Consequently, the U.S. Army Reserve Command does not effectively monitor the chemical and biological defense status of reserve forces.

Mission Priority

The priority given to chemical and biological defense varied widely. Most CINCS assign chemical and biological defense a lower priority than other threats. Even though the Joint Staff has tasked CINCS to ensure that their forces are trained in certain joint chemical and biological defense tasks, the CINCS we visited considered such training a service responsibility. Several DOD officials said that U.S. forces still face a generally limited, although increasing, threat of chemical and biological warfare.

At Army corps, division, and unit levels, the priority given to this area depended on the commander's opinion of its relative importance. At one

early-deploying division we visited, the commander had an aggressive system for chemical and biological training, monitoring, and reporting. At another, the commander had made a conscious decision to emphasize other areas, such as other-than-war deployments and quality-of-life considerations. As this unit was increasingly being asked to conduct operations other than war, the commander's emphasis on the chemical and biological warfare threat declined.

Officials at all levels said training in chemical and biological preparedness was not emphasized because of higher priority taskings, low levels of interest by higher headquarters, difficulty working in cumbersome and uncomfortable protective clothing and masks, the time-consuming nature of the training, and a heavy reliance on post-mobilization training and preparation.

We have no means to determine whether increased emphasis on chemical and biological warfare defense is warranted at the expense of other priorities. This is a matter of military judgment by DOD and of funding priorities by DOD and Congress. However, in view of the increasing chemical and biological threat and the continuing U.S. chemical and biological defense weaknesses identified in our report, we recommended that the Secretary of Defense reevaluate the priority and emphasis given this area throughout DOD. We further recommended that if the Secretary's reevaluation determines that more emphasis is needed, the Secretary should consider (1) elevating the single office responsible for program oversight to the Assistant Secretary level rather than leaving it in its current position as part of the Office of the Assistant Secretary for Nuclear, Biological, and Chemical Warfare Defense and (2) adopting more of a single manager approach for executing the chemical and biological defense program. We made eight other recommendations concerning opportunities to improve the effectiveness of existing DOD chemical and biological activities. DOD, in its official response to our report, generally agreed with our findings and concurred with 9 of our 10 recommendations.

We would be pleased to respond to any questions you may have.

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