

November 2004

# DEFENSE HEALTH CARE

## Force Health Protection and Surveillance Policy Compliance Was Mixed, but Appears Better for Recent Deployments



G A O

Accountability \* Integrity \* Reliability



Highlights of [GAO-05-120](#), a report to Congressional Requesters

## Why GAO Did This Study

A lack of servicemember health and deployment data hampered investigations into the nature and causes of illnesses reported by many servicemembers following the 1990-91 Persian Gulf War. Public Law 105-85, enacted in November 1997, required the Department of Defense (DOD) to establish a system to assess the medical condition of servicemembers before and after deployments. Following its September 2003 report examining Army and Air Force compliance with DOD's force health protection and surveillance policies for Operation Enduring Freedom (OEF) and Operation Joint Guardian (OJG), GAO was asked in November 2003 to also determine (1) the extent to which the services met DOD's policies for Operation Iraqi Freedom (OIF) and, where applicable, compare results with OEF/OJG; and (2) what steps DOD has taken to establish a quality assurance program to ensure that the military services comply with force health protection and surveillance policies.

## What GAO Recommends

Because GAO has already made recommendations aimed to improve force health protection and surveillance and because of the recent implementation of DOD's quality assurance program, GAO is not making any additional recommendations regarding the program at this time. DOD reviewed a draft of this report and concurred with its findings.

[www.gao.gov/cgi-bin/getrpt?GAO-05-120](http://www.gao.gov/cgi-bin/getrpt?GAO-05-120).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Clifton Spruill at (202) 512-4531 or [spruillc@gao.gov](mailto:spruillc@gao.gov).

## DEFENSE HEALTH CARE

# Force Health Protection and Surveillance Policy Compliance Was Mixed, but Appears Better for Recent Deployments

## What GAO Found

Overall compliance with DOD's force health protection and surveillance policies for servicemembers that deployed in support of OIF varied by service, installation, and policy requirement. Such policies require that servicemembers be assessed before and after deploying overseas and receive certain immunizations, and that health-related documentation be maintained in a centralized location. GAO reviewed 1,862 active duty and selected reserve component servicemembers' medical records from a universe of 4,316 at selected military service installations participating in OIF. Overall, Army and Air Force compliance for sampled servicemembers for OIF appears much better compared to OEF and OJG. For example:

- Lower percentages of Army and Air Force servicemembers were missing pre- and post-deployment health assessments for OIF.
- Higher percentages of Army and Air Force servicemembers received required pre-deployment immunizations for OIF.
- Lower percentages of deployment health-related documentation were missing in servicemembers' permanent medical records and at DOD's centralized database for OIF.

The Marine Corps installations examined generally had lower levels of compliance than the other services; however, GAO did not review medical records from the Marines or Navy for OEF and OJG. Noncompliance with the requirements for health assessments may result in deployment of servicemembers with existing health problems or concerns that are unaddressed. It may also delay appropriate medical follow-up for a health problem or concern that may have arisen during or after deployment.

In January 2004, DOD established an overall deployment quality assurance program for ensuring that the services comply with force health protection and surveillance policies, and implementation of the program is ongoing. DOD's quality assurance program requires (1) reporting from DOD's centralized database on each service's submission of required pre-deployment and post-deployment health assessments for deployed servicemembers, (2) reporting from each service regarding the results of the individual service's deployment quality assurance program, and (3) joint DOD and service representative reviews at selected military installations to validate the service's deployment health quality assurance reporting. DOD officials believe that their quality assurance program has improved the services' compliance with requirements. However, the services are at different stages of implementing their own quality assurance programs as mandated by DOD. At the installations visited, GAO analysts observed that the Army and Air Force had centralized quality assurance processes in place that extensively involved medical personnel examining whether DOD's force health protection and surveillance requirements were met for deploying/re-deploying servicemembers. In contrast, GAO analysts observed that the Marine Corps installations did not have well-defined quality assurance processes for ensuring that requirements were met for servicemembers.

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## Abbreviations

AMSA	Army Medical Surveillance Activity
CITA	Comprehensive Immunization Tracking Application
DOD	Department of Defense
GEMS	Global Expeditionary Medical Support
MEDPROS	Medical Protection System
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OJG	Operation Joint Guardian
SAMS	Shipboard Non-tactical Automated Data Processing Automated Medical System
TMIP	Theater Medical Information Program

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United States Government Accountability Office  
Washington, DC 20548

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November 12, 2004

The Honorable Duncan L. Hunter  
Chairman  
Committee on Armed Services  
House of Representatives

The Honorable Christopher H. Smith  
Chairman  
Committee on Veterans' Affairs  
House of Representatives

Following the 1990-91 Persian Gulf War, many servicemembers experienced health problems that they attributed to their military service in the Persian Gulf. However, subsequent investigations into the nature and causes of these illnesses were hampered by a lack of servicemember health and deployment data.

In response, the Congress enacted legislation in November 1997 requiring the Department of Defense (DOD) to establish a system for assessing the medical condition of servicemembers before and after their deployment to locations outside the United States and requiring the centralized retention of certain health-related data associated with the servicemember's deployment.<sup>1</sup> The system is to include the use of pre-deployment medical examinations and post-deployment medical examinations, including an assessment of mental health and the drawing of blood samples. DOD was also required to establish a quality assurance program to ensure compliance. DOD has implemented specific force health protection and surveillance policies. These policies include pre- and post-deployment health assessments designed to identify health issues or concerns that may affect the deployability of servicemembers or that may require medical attention; pre-deployment immunizations to address possible health threats in deployment locations; pre-deployment screening for tuberculosis; and the retention of blood samples on file prior to deployment and the collection of a post-deployment blood sample.

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<sup>1</sup> Section 765 of Pub. L. 105-85 amended title 10 of the United States Code by adding section 1074f.

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In September 2003, we reported that the Army and Air Force, for servicemembers deployed in support of Operation Enduring Freedom (OEF) and Operation Joint Guardian (OJG), did not comply with DOD's force health protection and surveillance policies for many active duty servicemembers, including the policies that the servicemembers be assessed before and after deploying overseas, that the services document receipt of certain immunizations, and that health-related documentation be maintained in a centralized location.<sup>2</sup> We had previously reported in May 1997 on several similar problems associated with the implementation of DOD's deployment health surveillance policies for servicemembers deployed to Bosnia in support of a peacekeeping operation.<sup>3</sup>

Concerned about the repercussions of the military services' failure to comply with DOD's force health protection and surveillance policies and the need to better understand the adverse health effects of war, you asked us, in November 2003, to examine the military services' implementation of DOD's force health protection and surveillance policies for servicemembers' deployments to Iraq in support of Operation Iraqi Freedom (OIF).<sup>4</sup> More specifically, we focused our work on the military services' deployments to Southwest Asia for OIF to address the following two questions:

1. To what extent did the military services meet DOD's force health protection and surveillance system requirements for servicemembers deployed to Southwest Asia in support of OIF and, where applicable, did compliance improve compared to OEF/OJG?

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<sup>2</sup> See GAO, *Defense Health Care: Quality Assurance Process Needed to Improve Force Health Protection and Surveillance*, [GAO-03-1041](#) (Washington, D.C.: Sept. 19, 2003); and *Defense Health Care: DOD Needs to Improve Force Health Protection and Surveillance Processes*, [GAO-04-158T](#) (Washington, D.C.: Oct. 16, 2003).

<sup>3</sup> Problems cited in our May 1997 report included the following: required medical assessments not prepared for many servicemembers; incomplete medical record keeping; an incomplete centralized health assessment database; and an inaccurate personnel deployment database. See GAO, *Defense Health Care: Medical Surveillance Improved Since Gulf War, but Mixed Results in Bosnia*, [GAO/NSIAD-97-136](#) (Washington, D.C.: May 13, 1997).

<sup>4</sup> This request also asked us to examine how the Department of Veterans Affairs and DOD are collaborating to provide physical exams for servicemembers who leave the military and apply for service-connected disability compensation. See GAO, *VA and DOD Health Care: Efforts to Coordinate a Single Physical Exam Process for Servicemembers Leaving the Military*, [GAO-05-64](#) (Washington, D.C.: Nov. 12, 2004).

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2. What steps has DOD taken to establish a quality assurance program to ensure that the military services comply with force health protection and surveillance policies?

To accomplish these objectives, we obtained the force health protection and surveillance policies applicable to the OIF deployment from the U.S. Central Command, the Office of the Assistant Secretary of Defense for Health Affairs, and the services' Surgeons General. For each service, we identified those installations that had amongst the largest deployments or redeployments of servicemembers during specified time frames. Because of concerns about the reliability of overall personnel deployment data, we obtained data from the selected installations on the universe of those servicemembers who deployed or redeployed from the selected installations. To test the implementation of these policies, we reviewed samples or, in some instances, the entire universe of medical records for servicemembers at seven military installations.<sup>5</sup> In total, we reviewed medical records of 1,328 active duty servicemembers—including 750 Army servicemembers, 270 Marine Corps servicemembers, 146 Air Force servicemembers, and 162 Navy servicemembers. In addition, we reviewed medical records for 409 Army reserve servicemembers and 125 Army National Guard servicemembers.

To provide assurances that the data were reliable and that our review of the selected medical records was accurate, we requested the installations' medical personnel to reexamine those medical records that were missing required health assessments or immunizations and adjusted our results where documentation was subsequently identified. We also requested installation medical personnel to check all possible sources for missing pre- and post-deployment health assessments and missing immunizations. We also examined, for all medical records within our review, the completeness of the centralized records at the Army Medical Surveillance Activity (AMSA),<sup>6</sup> which is tasked with centrally collecting deployment health-related information for all of the military services. Further, we interviewed officials with the Office of the Deployment Health Support Directorate within the Office of Assistant Secretary of Defense for Health

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<sup>5</sup> Throughout this report, we refer to all of our sample or universe selections of medical records at the installations we visited as "samples."

<sup>6</sup> The Army Medical Surveillance Activity is DOD's executive agent for collecting and retaining the military services' deployment health-related documents—including the pre-deployment and post-deployment health assessments and immunizations.

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Affairs, the offices of the services' Surgeons General, and the military installations that we visited for medical records review regarding the quality assurance processes established to ensure compliance with DOD force health protection and surveillance policies. For more detailed information of our scope and methodology, see appendix I. We performed our work from November 2003 through August 2004 in accordance with generally accepted government auditing standards.

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## Results in Brief

Overall compliance with DOD's force health protection and surveillance policies for servicemembers who deployed in support of OIF varied by service, by installation, and by policy requirement. Army and Air Force compliance during OIF for the installations in our review appears much better compared to the installations included in our previous review<sup>7</sup> of OEF and OJG. Installations we examined from the Marine Corps, on the other hand, generally had lower levels of compliance across the policy requirements we examined when compared to other services; however, we did not review medical records from the Marines or Navy in our previous review. Our review disclosed that the extent of policy compliance varied in the following areas:

- **Deployment health assessments.** The Army and the Air Force installations were generally missing small percentages (less than 10 percent) of pre-deployment health assessments. In contrast, pre-deployment health assessments were missing for an estimated 63 percent<sup>8</sup> of the servicemembers at one Marine Corps installation and for about 27 percent at the other Marine Corps installation reviewed. The Navy installation in our review was missing pre-deployment health assessments for 24 percent of the servicemembers. Post-deployment health assessments were completed for most servicemembers (95 percent or more) in our samples, except at one of the Marine Corps installations we visited. While almost all post-deployment health assessments for the services were completed within DOD required time frames except for one Army installation, many of the pre-deployment health assessments in our samples were not. Except for servicemembers at one of the two Marine Corps installations visited, a health care provider reviewed all but small percentages of the completed health assessments as required by DOD policy.

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<sup>7</sup> GAO-03-1041.

<sup>8</sup> All percentage estimates from our sample review of medical records have 95 percent confidence intervals that are displayed in tables and figures presented in this report.



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- **Immunizations and other health requirements.** Servicemembers receiving all of the pre-deployment immunizations required for OIF, based on the documentation we reviewed, ranged from 52 percent to 98 percent at the installations visited. The percentage of servicemembers missing two or more of the required immunizations, based on the documentation reviewed, ranged from 0 to about 11 percent at the installations visited. Servicemembers missing current tuberculosis screening at the time of their deployment ranged from 3 percent to 64 percent at the installations visited. Between less than 1 and 14 percent of the servicemembers at the installations had blood samples in the repository that were older than the required limit of 1 year at the time of deployment. Many servicemembers in our review at the two Marine Corps installations visited were missing their required post-deployment blood draw—19 percent at one installation and 13 percent at the other.
  - **Completeness of medical records and centralized data collection.** Generally, servicemembers' permanent medical records at the installations we visited were missing small percentages (less than 11 percent) of pre- and post-deployment health assessments and immunizations we found at AMSA, with the exception of one Army and one Marine Corps installation in our review. We also checked whether servicemember in-theater health care visits were documented in the servicemember's medical record at two Army and two Marine Corps installations that used manual patient sign-in logs, and found varying levels of missing documentation of the visits we reviewed. The Air Force and Navy installations used automated systems for recording in-theater health care visits, but we found that 20 of 40 visits reviewed at one location were not also documented in servicemembers' medical records. Moreover, the AMSA database—designed to function as the centralized collection location for deployment health-related information for all military services—was lacking documentation of many health assessments and immunizations that we found in servicemembers' medical records at the installations we visited. For example, for one of the Marine Corps installations in our review, AMSA was missing all of the pre-deployment health assessments, 26 percent of the post-deployment health assessments, and 44 percent of the immunizations that we found in the servicemembers' medical records.

Although the number of installations we visited was limited and different than those in our previous review with the exception of Fort Campbell, the Army and Air Force's compliance with the requirements for OIF appears much better compared to the services' compliance for the installations we reviewed for OEF and OJG. Because our previous report on compliance

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with requirements for OEF and OJG focused only on the Army and Air Force, we were unable to provide comparable data for the Navy and Marine Corps. To compare overall data from Army and Air Force active duty servicemembers reviewed for OEF/OJG with OIF, we aggregated data from all records examined in these two reviews to provide some perspective and determined that:

- Lower percentages of Army and Air Force servicemembers were missing pre- and post-deployment health assessments in OIF compared to OEF/OJF and, in some cases, the services were in full compliance. For example, Army servicemembers at the Army installation reviewed who were missing post-deployment health assessments upon return from OIF was 0 percent compared to an average of 29 for the installations we reviewed in OEF/OJG.
- Higher percentages of Army and Air Force servicemembers received all of the required pre-deployment immunizations based on the documentation reviewed for OIF compared to OEF/OJG. In one notable example, 98 percent of the Air Force active duty servicemembers received all of the required immunizations before deploying for OIF, compared with an average of 71 percent for OEF/OJG.
- Lower overall percentages of deployment health-related documentation were missing in the servicemembers' permanent medical records and at DOD's centralized database for OIF compared to OEF/OJG, for both the Army and the Air Force. Also, immunizations for Army servicemembers found in the medical record but missing from the centralized database was an average of 9 percent in OIF compared to an average of 62 percent in OEF/OJG.

In January 2004, DOD established an overall deployment quality assurance program for ensuring that the services comply with force health protection and surveillance policies, and implementation of the program is ongoing. DOD's quality assurance program requires (1) reporting from DOD's centralized database on each service's submission of required pre-deployment and post-deployment health assessments for deployed servicemembers, (2) reporting from each service regarding the results of the individual service's deployment health quality assurance program, and (3) joint DOD and service representative reviews at selected military installations to validate the service's deployment health quality assurance reporting. DOD officials believe that their quality assurance program has improved the services' compliance with requirements. However, the services are at different stages of implementing their own quality

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assurance programs as mandated by DOD. For example, as of September 2004, the Army had conducted quality assurance reviews to assess compliance with force health protection and surveillance requirements at 10 Army installations. However, according to an official in the office of the Surgeon General of the Navy, no decisions have been reached regarding whether periodic audits of Navy servicemembers' medical records will be conducted to assess compliance with DOD requirements. At the installations we visited, we observed that the Army and Air Force had centralized quality assurance processes in place that extensively involved medical personnel examining whether DOD's force health protection and surveillance requirements were met for deploying/re-deploying servicemembers. In contrast, we observed that the Marine Corps installations we reviewed did not have well-defined quality assurance processes for ensuring that the requirements were met for servicemembers. We did not evaluate the effectiveness of DOD's deployment quality assurance program because of the relatively short time of its implementation.

In a September 2004 report, we made recommendations to improve the submission and timeliness of pre- and post-deployment health assessments to AMSA.<sup>9</sup> Specifically, we recommended that the Secretary of Defense direct the Commandant of the Marine Corps to establish a mechanism to oversee the submission of pre- and post-deployment assessments to AMSA, and to direct the Under Secretary of Defense for Personnel and Readiness, in concert with the service secretaries, to take steps to improve the electronic submission of pre- and post-deployment health assessments. In a September 2003 report, we also recommended that DOD establish an effective quality assurance program and we continue to believe that implementation of such a program could help the Marine Corps improve its compliance with force health protection and surveillance requirements. Because of these prior recommendations and the recency of DOD's implementation of its quality assurance program, we are not making any additional recommendations regarding the program at this time.

DOD reviewed a draft of this report and concurred with its findings.

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<sup>9</sup> GAO, *Military Personnel: DOD Needs to Address Long-term Reserve Force Availability and Related Mobilization and Demobilization Issues*, [GAO-04-1031](#) (Washington, D.C.: Sept. 15, 2004).

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## Background

In September 2003, we reported that the Army and Air Force did not comply with DOD's force health protection and surveillance requirements for many servicemembers deploying in support of OEF in Central Asia and OJG in Kosovo at the installations we visited.<sup>10</sup> Specifically, our review disclosed problems with the Army and Air Force's implementation of DOD's force health protection and surveillance requirements in the following areas:

- **Deployment health assessments.** Significant percentages of Army and Air Force servicemembers were missing one or both of their pre- and post-deployment health assessments and, when health assessments were conducted, as many as 45 percent of them were not done within the required time frames.
- **Immunizations and other pre-deployment requirements.** Based on the documentation we reviewed, as many as 46 percent of servicemembers in our samples were missing one of the pre-deployment immunizations required, and as many as 40 percent were missing a current tuberculosis screening at the time of their deployment. Up to 29 percent of the servicemembers in our samples had blood samples in the repository older than the required limit of 1 year at the time of deployment.
- **Completeness of medical records and centralized data collection.** Servicemembers' permanent medical records at the Army and Air Force installations we visited did not always include documentation of the completed health assessments that we found at AMSA and at the U.S. Special Operations Command. In one sample, 100 percent of the pre-deployment health assessments were not documented in the servicemember medical records that we reviewed. Furthermore, our review disclosed that the AMSA database was lacking documentation of many health assessments and immunizations that we found in the servicemembers' medical records at the installations visited.

We also wrote in our 2003 report that DOD did not have oversight of departmentwide efforts to comply with health surveillance requirements. There was no effective quality assurance program at the Office of the Assistant Secretary of Defense for Health Affairs or at the Offices of the Surgeons' General of the Army or Air Force that helped ensure compliance

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<sup>10</sup> [GAO-03-1041](#).

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with force health protection and surveillance policies. We believed that the lack of such a system was a major cause of the high rate of noncompliance we found at the installations we visited, and thus recommended that the department establish an effective quality assurance program to ensure that the military services comply with the force health protection and surveillance requirements for all servicemembers. The department concurred with our recommendation.

The problems that we identified in our 2003 report were similar to those we had reported in May 1997 for Army servicemembers deployed to Bosnia in support of a peacekeeping operation.<sup>11</sup> Following the publication of our May 1997 report, the Congress, in November 1997, included a provision in the National Defense Authorization Act for Fiscal Year 1998 requiring the Secretary of Defense to establish a medical tracking system for servicemembers deployed overseas as follows:

“(a) SYSTEM REQUIRED—The Secretary of Defense shall establish a system to assess the medical condition of members of the armed forces (including members of the reserve components) who are deployed outside the United States or its territories or possessions as part of a contingency operation (including a humanitarian operation, peacekeeping operation, or similar operation) or combat operation.

“(b) ELEMENTS OF SYSTEM—The system described in subsection (a) shall include the use of predeployment medical examinations and postdeployment medical examinations (including an assessment of mental health and the drawing of blood samples) to accurately record the medical condition of members before their deployment and any changes in their medical condition during the course of their deployment. The postdeployment examination shall be conducted when the member is redeployed or otherwise leaves an area in which the system is in operation (or as soon as possible thereafter).

“(c) RECORDKEEPING—The results of all medical examinations conducted under the system, records of all health care services (including immunizations) received by members described in subsection (a) in anticipation of their deployment or during the course of their deployment, and records of events occurring in the deployment area that may affect the health of such members shall be retained and maintained in a centralized location to improve future access to the records.

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<sup>11</sup> [GAO/NSIAD-97-136](#).

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“(d) QUALITY ASSURANCE—The Secretary of Defense shall establish a quality assurance program to evaluate the success of the system in ensuring that members described in subsection (a) receive predeployment medical examinations and postdeployment medical examinations and that the recordkeeping requirements with respect to the system are met.”<sup>12</sup>

As set forth above, these provisions require the use of pre-deployment and post-deployment medical examinations to accurately record the medical condition of servicemembers before deployment and any changes during their deployment. In a June 30, 2003, correspondence with GAO, the Assistant Secretary of Defense for Health Affairs stated that “it would be logistically impossible to conduct a complete physical examination on all personnel immediately prior to deployment and still deploy them in a timely manner.” Therefore, DOD required both pre- and post-deployment health assessments for servicemembers who deploy for 30 or more continuous days to a land-based location outside the United States without a permanent U.S. military treatment facility. Both assessments use a questionnaire designed to help military healthcare providers in identifying health problems and providing needed medical care. The pre-deployment health assessment is generally administered at the home station before deployment, and the post-deployment health assessment is completed either in theater before redeployment to the servicemember’s home unit or shortly upon redeployment.

As a component of medical examinations, the statute quoted above also requires that blood samples be drawn before and after a servicemember’s deployment. DOD Instruction 6490.3, August 7, 1997, requires that a pre-deployment blood sample be obtained within 12 months of the servicemember’s deployment.<sup>13</sup> However, it requires the blood samples be drawn upon return from deployment only when directed by the Assistant Secretary of Defense for Health Affairs. According to DOD, the implementation of this requirement was based on its judgment that the Human Immunodeficiency Virus serum sampling taken independent of deployment actions is sufficient to meet both pre- and post-deployment health needs, except that more timely post-deployment sampling may be directed when based on a recognized health threat or exposure. Prior to

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<sup>12</sup> Section 765 of Pub. L. 105-85 amended title 10 of the United States Code by adding section 1074f.

<sup>13</sup> DOD Instruction 6490.3, “Implementation and Application of Joint Medical Surveillance for Deployments,” August 7, 1997.

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April 2003, DOD did not require a post-deployment blood sample for servicemembers supporting the OEF and OJG deployments.

In April 2003, DOD revised its health surveillance policy for blood samples and post-deployment health assessments. Effective May 22, 2003, the services were required to draw a blood sample from each redeploying servicemember no later than 30 days after arrival at a demobilization site or home station.<sup>14</sup> According to DOD, this requirement for post-deployment blood samples was established in response to an assessment of health threats and national interests associated with current deployments. The department also revised its policy guidance for enhanced post-deployment health assessments to gather more information from deployed servicemembers about events that occurred during a deployment. More specifically, the revised policy requires that a trained health care provider conduct a face-to-face health assessment with each returning servicemember to ascertain (1) the individual's responses to the health assessment questions on the post-deployment health assessment form; (2) the presence of any mental health or psychosocial issues commonly associated with deployments; (3) any special medications taken during the deployment; and (4) concerns about possible environmental or occupational exposures.

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## Services' Compliance with Force Health Protection and Surveillance Requirements for OIF Was Mixed, but Appears Better Than for OEF/OJG

The overall record of the military services in meeting force health protection and surveillance system requirements for OIF was mixed and varied by service, by installation visited, and by specific policy requirement; however, our data shows much better compliance with these requirements in the Army and Air Force installations we reviewed compared to the installations in our earlier review of OEF/OJG. Of the installations reviewed for this report, the Marine Corps generally had lower levels of compliance than the other services.

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<sup>14</sup> Under Secretary of Defense for Personnel and Readiness Memorandum, "Enhanced Post-Deployment Health Assessments," April 22, 2003.

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## Services' Compliance on All Requirements Uneven, but Marine Corps Lags Behind

None of the services fully complied with all of the force health protection and surveillance system requirements, which include completing pre- and post-deployment health assessments, receipt of immunizations, and meeting pre-deployment requirements related to tuberculosis screening and pre and post-deployment blood samples. Also, the services did not fully comply with requirements that servicemembers' permanent medical records include required health-related information, and that DOD's centralized database includes documentation of servicemember health-related information.

### Health Assessments

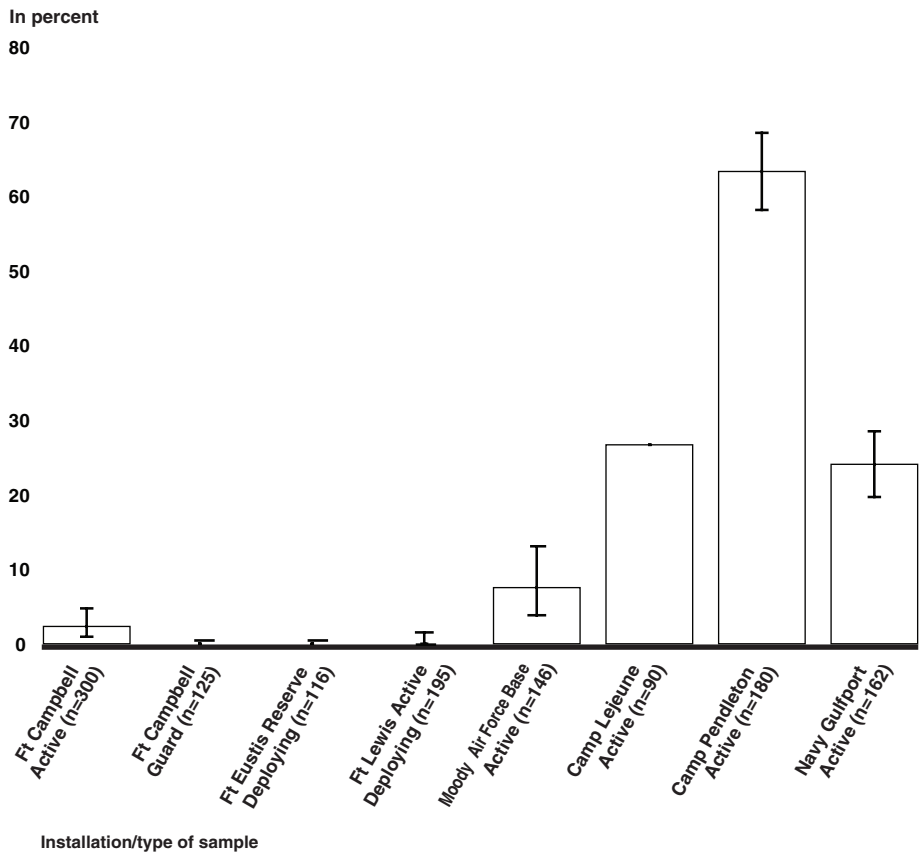
Servicemembers in our review at the Army and Air Force installations were generally missing small percentages of pre-deployment health assessments, as shown in figure 1. In contrast, pre-deployment health assessments were missing for an estimated 63 percent of the servicemembers at one Marine Corps installation and for 27 percent at the other Marine Corps installation visited. Similarly, the Navy installation we visited was missing pre-deployment health assessments for about 24 percent of the servicemembers; however, we note that the pre-deployment health assessments reviewed for Navy servicemembers were completed prior to June 1, 2003, and may not reflect improvements arising from increased emphasis following our prior review of the Army and Air Force's compliance for OEF/OJG.<sup>15</sup>

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<sup>15</sup> [GAO-03-1041](#).



**Figure 1: Percent of Servicemembers Missing Pre-deployment Health Assessments**



Source: GAO analyses of documentation from servicemember medical records and DOD medical databases.

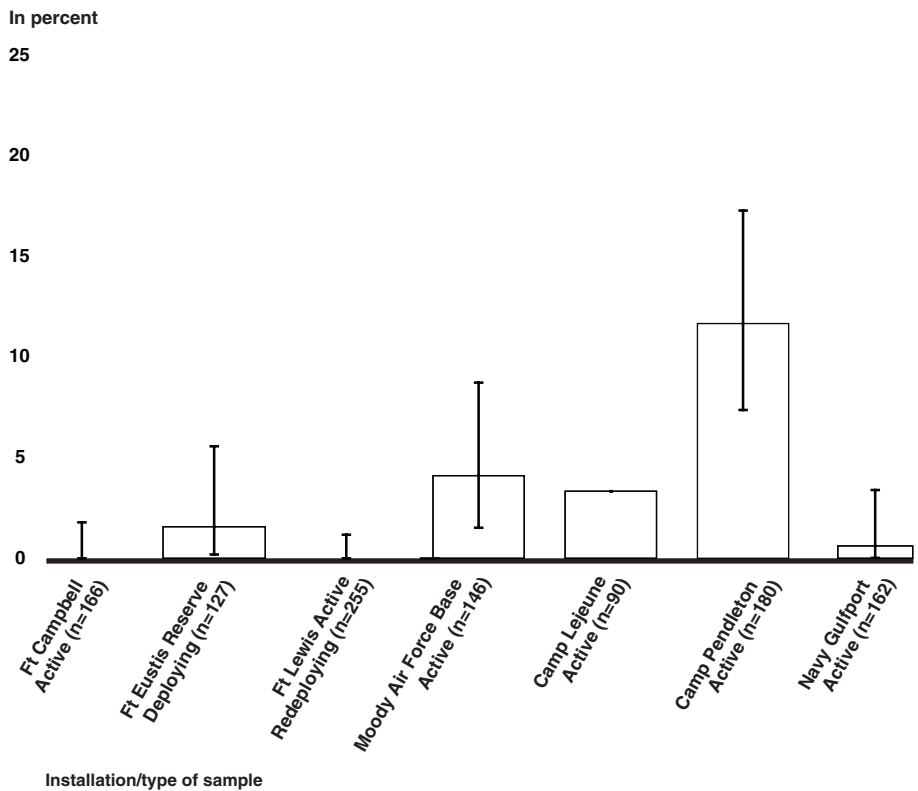
Notes: [ ] = 95 percent confidence interval, upper and lower bounds for each estimate. Representations of data without confidence intervals indicate that the sample represents 100 percent of the eligible population.

These percentages reflect assessments from all sources and without regard to timeliness.

At three Army installations we visited, we also analyzed the extent to which pre-deployment health assessments were completed for those servicemembers who re-deployed back to their home unit after June 1, 2003. Servicemembers associated with these re-deployment samples deployed in support of OIF prior to June 1, 2003. For two of these Army installations—Fort Eustis and Fort Campbell—we estimate that less than 1 percent of the servicemembers were missing pre-deployment health assessments. However, approximately 39 percent of the servicemembers that redeployed back to Fort Lewis on or after June 1, 2003, were missing their pre-deployment health assessments.

Post-deployment health assessments were missing for small percentages of servicemembers, except at one of the Marine Corps installations we visited, as shown in figure 2.

**Figure 2: Percent of Servicemembers Missing Post-deployment Health Assessments**



Source: GAO analyses of documentation from servicemember medical records and DOD medical databases.

Notes: [ ] = 95 percent confidence interval, upper and lower bounds for each estimate. Representations of data without confidence intervals indicate that the sample represents 100 percent of the eligible population.

These percentages reflect assessments from all sources and without regard to timeliness.

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Although the Army provides for waivers for longer time frames, DOD policy requires that servicemembers complete a pre-deployment health assessment form within 30 days of their deployment and a post-deployment health assessment form within 5 days upon redeployment back to their home station.<sup>16</sup> For consistency and comparability between services, our analysis uses the DOD policy for reporting results. These time frames were established to allow time to identify and resolve any health concerns or problems that may affect the ability of the servicemember to deploy, and to promptly identify and address any health concerns or problems that may have arisen during the servicemember's deployment. For servicemembers that had completed pre-deployment health assessments, we found that many assessments were not completed on time in accordance with requirements. More specifically, we estimate that pre-deployment health assessments were not completed on time for:

- 47 percent of the pre-deployment health assessments for the active duty servicemembers at Fort Lewis;
- 41 percent of the pre-deployment health assessments for the active duty servicemembers and for 96 percent of the Army National Guard unit at Fort Campbell; and
- 43 percent of the pre-deployment health assessments at Camp Lejeune and 29 percent at Camp Pendleton.

For the most part, small percentages—ranging from 0 to 5 percent—of the post-deployment health assessments were not completed on time at the installations visited. The exception was at Fort Lewis, where we found that about 21 percent of post-deployment health assessments for servicemembers were not completed on time.

DOD policy also requires that pre-deployment and post-deployment health assessments are to be reviewed immediately by a health care provider to identify any medical care needed by the servicemember.<sup>17</sup> Except for servicemembers at one of the two Marine Corps installations visited, only small percentages of the pre- and post-deployment health assessments, ranging from 0 to 6 percent, were not reviewed by a health care provider. At Camp Pendleton, we found that a health care provider did not review

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<sup>16</sup> Office of the Chairman, the Joint Chiefs of Staff, Memorandum MCM-0006-2, "Updated Procedures for Deployment Health Surveillance and Readiness," February 1, 2002.

<sup>17</sup> The Joint Staff, Joint Staff Memorandum MCM-0006-2.

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## Immunizations and Other Health Requirements

33 percent of the pre-deployment health assessments and 21 percent of the post-deployment health assessments for its servicemembers .

Noncompliance with the requirements for pre-deployment health assessments may result in servicemembers with existing health problems or concerns being deployed with unaddressed health problems. Also, failure to complete post-deployment health assessments may risk a delay in obtaining appropriate medical follow-up attention for a health problem or concern that may have arisen during or following the deployment.

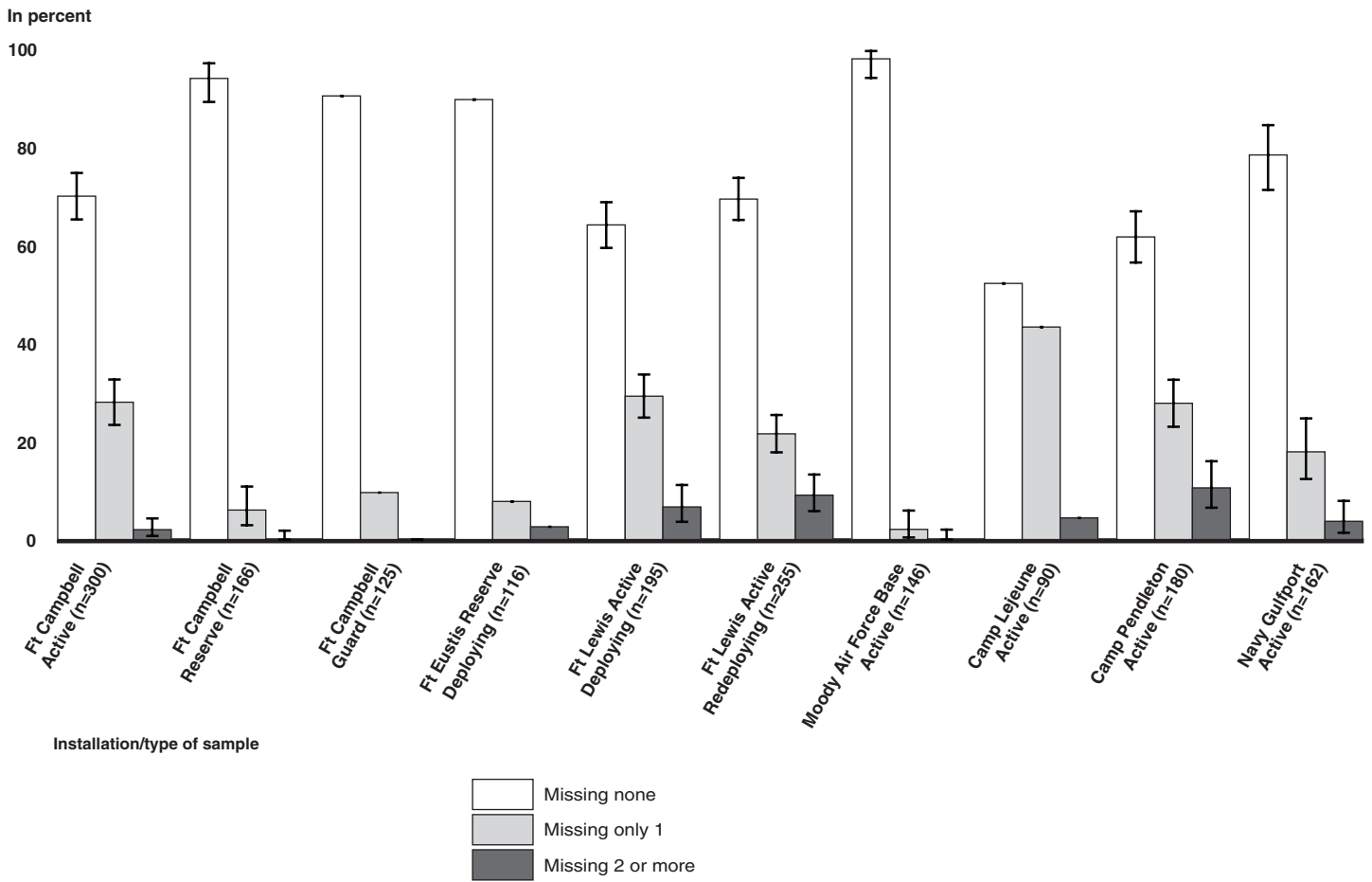
Based on our samples, the services did not fully meet immunization and other health requirements for OIF deployments, although all servicemembers in our sample had received at least one anthrax immunization before they returned from the deployment as required. Almost all of the servicemembers in our samples had a pre-deployment blood sample in the DOD Serum Repository but frequently the blood sample was older than the one-year requirement. The services' record in regard to post-deployment blood sample draws was mixed.

The U.S. Central Command required the following pre-deployment immunizations for all servicemembers who deployed to Southwest Asia in support of OIF: hepatitis A (two-shot series); measles, mumps, and rubella; polio; tetanus/diphtheria within the last 10 years; typhoid within the last 5 years; and influenza within the last 12 months.<sup>18</sup> Based on the documentation we reviewed, the estimated percent of servicemembers receiving all of the required pre-deployment immunizations ranged from 52 percent to 98 percent at the installations we visited (see fig. 3). The percent of servicemembers missing only one of the pre-deployment immunizations required for the OIF deployment ranged from 2 percent to 43 percent at the installations we visited. Furthermore, the percent of servicemembers missing 2 or more of the required immunizations ranged from 0 percent to 11 percent.

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<sup>18</sup> U.S. Central Command, *MOD 3 TO DEPLOYMENT GUIDANCE (Mar. 30, 2003)* and *MOD 4 TO USCINCCENT: Individual Protection and Individual/Unit Deployment Policy (July 18, 2003)*.

**Figure 3: Percent of Servicemembers Missing Required Pre-deployment Immunizations**

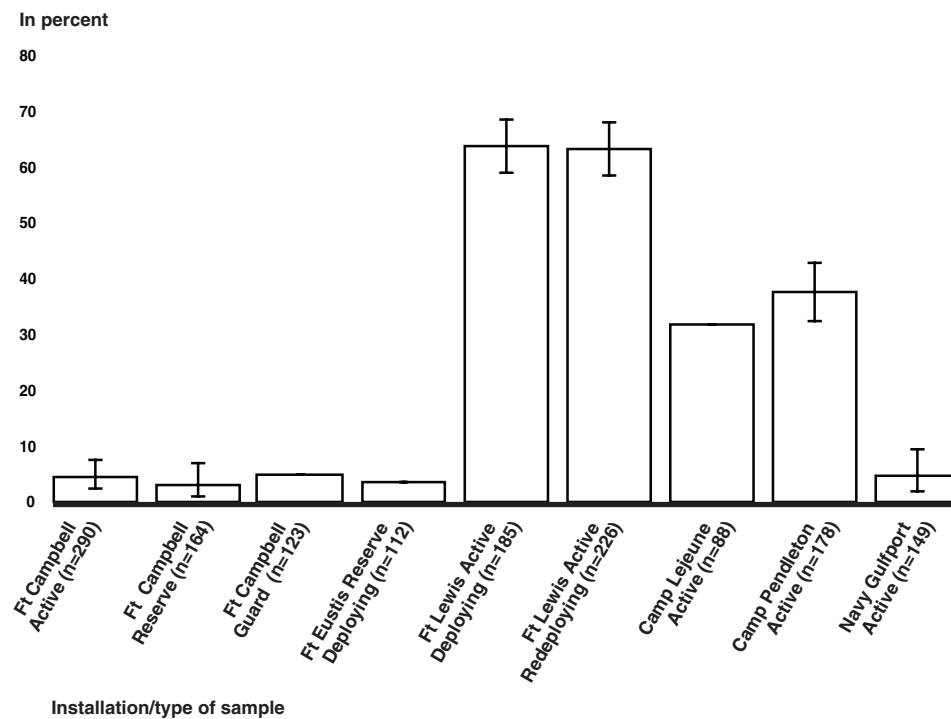


Source: GAO analyses of documentation from servicemember medical records and DOD medical databases.

Notes: [ ] = 95 percent confidence interval, upper and lower bounds for each estimate. Representations of data without confidence intervals indicate that the sample represents 100 percent of the eligible population.

Figure 4 indicates that 3 to about 64 percent of the servicemembers at the installations visited were missing a current tuberculosis screening at the time of their deployment. A tuberculosis screening is deemed “current” if it occurred within 1 year prior to deployment. Specifically, the Army, Navy, and Marine Corps required servicemembers deploying to Southwest Asia in support of OIF to be screened for tuberculosis within 12 months of deployment. The Air Force requirement for tuberculosis screening depends on the servicemember’s occupational specialty; therefore we did not examine tuberculosis screening for servicemembers in our sample at Moody Air Force Base due to the difficulty of determining occupational specialty for each servicemember.

**Figure 4: Percent of Servicemembers That Did Not Have Current Tuberculosis Screening**



Source: GAO analyses of documentation from servicemember medical records and DOD medical databases.

Notes: [ ] = 95 percent confidence interval, upper and lower bounds for each estimate. Representations of data without confidence intervals indicate that the sample represents 100 percent of the eligible population.

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Although not required as pre-deployment immunizations, U.S. Central Command policies require that servicemembers deployed to Southwest Asia in support of OIF receive a smallpox immunization and at least one anthrax immunization either before deployment or while in theater. For the servicemembers in our samples at the installations visited, we found that all of the servicemembers received at least one anthrax immunization in accordance with the requirement. Only small percentages of servicemembers at two of the three Army installations, the Air Force installation, and the Navy installation visited did not receive the required smallpox immunization. However, an estimated 18 percent of the servicemembers at Fort Lewis, 8 percent at Camp Lejeune, and 27 percent at Camp Pendleton did not receive the required smallpox immunization.

U.S. Central Command policies also require that deploying servicemembers have a blood sample in the DOD Serum Repository not older than 12 months prior to deployment.<sup>19</sup> Almost all of the servicemembers in our review had a pre-deployment blood sample in the DOD Serum Repository, but frequently the blood samples were older than the 1-year requirement. As shown in table 1 below, 14 percent of servicemembers at Camp Pendleton had blood samples in the repository older than 1 year.

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<sup>19</sup> U.S. Central Command, "Personnel Policy Guidance for U.S. Individual Augmentation Personnel in Support of Operation Enduring Freedom," October 3, 2001.

**Table 1: Percent of Servicemember Pre-deployment Blood Samples Held in Repository**

Installation/type of sample	Had blood sample in repository			Blood sample older than 1 year		
	Percent	Confidence interval <sup>a</sup>	N	Percent	Confidence interval <sup>a</sup>	N
<b>Army</b>						
Ft. Campbell						
Active (Deploying sample)	100	99.01–100	300	4	2.08–6.88	300
Reserve (Re-deploying sample)	100	98.21–100	166	8	4.69–13.75	166
Guard (Deploying sample)	100	<sup>b</sup>	125	<1	<sup>b</sup>	125
Ft. Eustis						
Reserve (Deploying sample)	99	<sup>b</sup>	116	<1	<sup>b</sup>	115
Reserve (Re-deploying sample)	<sup>c</sup>					
Ft. Lewis						
Active (Deploying sample)	100	98.48–100	195	6	2.85–9.87	195
Active (Re-deploying sample)	99	96.6–99.76	255	13	8.85–17.45	252
<b>Air Force</b>						
Moody AFB						
Active (Re-deploying sample)	100	97.97–100	146	8	3.82–13.08	146
<b>Marine Corps</b>						
Camp Lejeune						
Active	99	<sup>b</sup>	90	12	<sup>b</sup>	89
Camp Pendleton						
Active	100	98.35–100	180	14	9.19–19.82	180
<b>Navy</b>						
Naval Construction Battalion Center						
Active (Re-deploying sample)	100	98.17–100	162	4	1.75–8.70	162

Source: GAO analyses of DOD data for the sample of servicemember medical records.

<sup>a</sup>95 percent confidence interval, upper and lower bounds for each estimate.

<sup>b</sup>No confidence intervals reported because the sample represents 100 percent of the eligible population.

<sup>c</sup>We did not collect pre-deployment blood sample data for servicemembers in this sample.

Effective May 22, 2003, the services were required to draw a post-deployment blood sample from each re-deploying servicemember no later than 30 days after arrival at a demobilization site or home station.<sup>20</sup>

<sup>20</sup> Under Secretary of Defense for Personnel and Readiness Memorandum, “Enhanced Post-Deployment Health Assessments,” April 22, 2003.



Only small percentages of the servicemembers at the Army and Air Force installations visited did not have a post-deployment blood sample drawn. The Navy and Marine Corps installations visited had percentages of servicemembers missing post-deployment blood samples ranging from 7 to 19 percent, and the post-deployment blood samples that were available were frequently drawn later than required, as shown in table 2.

**Table 2: Blood Samples Drawn for Re-deploying Servicemembers Only**

Installation/type of sample	Had blood sample drawn			Blood sample drawn later than required		
	Percent	Confidence interval <sup>a</sup>	N	Percent	Confidence interval <sup>a</sup>	N
<b>Army</b>						
Ft. Campbell						
Reserve (Re-deploying sample)	100	98.21–100	166	1	0.15–4.28	166
Ft. Eustis						
Reserve (Re-deploying sample)	97	92.13–99.14	127	2	0.51–6.96	123
Ft. Lewis						
Active (Re-deploying sample)	98	96.03–99.57	255	4	2.21–7.71	251
<b>Air Force</b>						
Moody AFB						
Active (Re-deploying sample)	98	94.11–99.57	146	7	3.40–12.48	143
<b>Marine Corps</b>						
Camp Lejeune						
Active	87	<sup>b</sup>	90	12	<sup>b</sup>	78
Camp Pendleton						
Active	81	74.01–86.07	180	26	20.30–30.73	145
<b>Navy</b>						
Naval Construction Battalion Center						
Active (Re-deploying sample)	93	87.42–96.11	162	72	67.19–76.81	150

Source: GAO analyses of DOD data for the sample of servicemember medical records..

<sup>a</sup>95 percent confidence interval, upper and lower bounds for each estimate.

<sup>b</sup>No confidence intervals reported because the sample represents 100 percent of the eligible population.

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Completeness of Medical Documentation

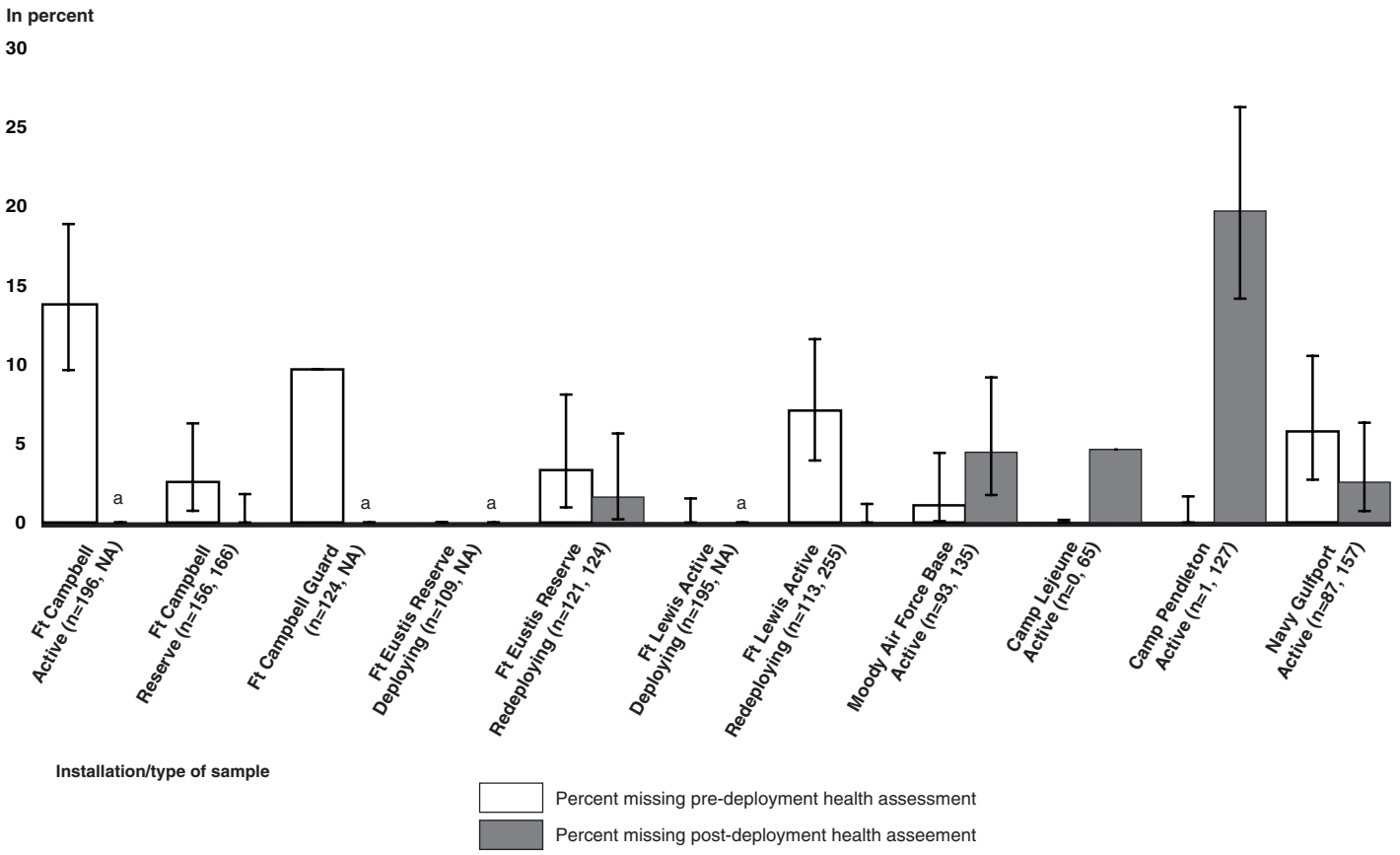
DOD policy requires that the original completed pre-deployment and post-deployment health assessment forms be placed in the servicemember's permanent medical record and that a copy be forwarded to AMSA.<sup>21</sup> Also, the military services require that all immunizations be documented in the servicemember's medical record.<sup>22</sup> Figure 5 shows that small percentages of the completed health assessments we found at AMSA for servicemembers in our samples were not documented in the servicemember's permanent medical record, ranging from 0 to 14 percent for pre-deployment health assessments and from 0 percent to 20 percent for post-deployment health assessments. Almost all of the immunizations we found at AMSA for servicemembers in our samples were documented in the servicemember's medical record.

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<sup>21</sup> Office of the Chairman, The Joint Chiefs of Staff, Memorandum MCM-0006-02, "Updated Procedures for Deployment Health Surveillance and Readiness," February 1, 2002.

<sup>22</sup> Air Force Joint Instruction 48-110, Army Regulation 40-562, Bureau of Medicine and Surgery Instruction 6230.15 and Coast Guard Commandant Instruction M6230.4E, "Immunizations and Chemoprophylaxis," May 12, 2004.

**Figure 5: Percent of Health Assessments Found in Centralized Database That Were Not Found in the Servicemember’s Medical Records**



Source: GAO analyses of documentation from servicemember medical records and DOD medical databases.

Notes: [ ] = 95 percent confidence interval, upper and lower bounds for each estimate. Representations of data without confidence intervals indicate that the sample represents 100 percent of the eligible population.

\*Not applicable for post-deployment health assessments since servicemembers were still deployed at the time of our review.

Service policies also require documentation in the servicemember’s permanent medical records of all visits to in-theater medical facilities.<sup>23</sup>

<sup>23</sup> Army Regulation 40-66, “Medical Records Administration,” October 23, 2002, Air Force Instruction 41-210, “Health Services Patient Administration Functions,” October 1, 2000, and Department of the Navy NAVMED P-117, “Manual of the Medical Department,” December 23, 1994.

At six of the seven installations we visited, we sampled and examined whether selected in-theater visits to medical providers—such as battalion aid stations for the Army and Marine Corps and expeditionary medical support for the Air Force—were documented in the servicemember’s permanent medical record. Both the Air Force and Navy installations used automated systems for recording servicemember in-theater visits to medical facilities. While in-theater visits were documented in these automated systems, we found that 20 of the 40 Air Force in-theater visits we examined at Moody Air Force Base and 6 of the 60 Navy in-theater visits we examined at the Naval Construction Battalion Center were not also documented in the servicemembers’ permanent medical records. In contrast, the Army and Marine Corps installations used manual patient sign-in logs for servicemembers’ visits to in-theater medical providers and relied exclusively on paper documentation of the in-theater visits in the servicemember’s permanent medical record. The results of our review are summarized in table 3.

**Table 3: Documentation of In-theater Visits in Permanent Medical Records**

<b>Installation</b>	<b>Number of in-theater visits reviewed</b>	<b>Number with no documentation in medical record</b>
<b>Army</b>		
Fort Campbell	50	9
Fort Lewis	33	30
<b>Marine Corps</b>		
Camp Lejeune	64	24
Camp Pendleton	30	24

Source: GAO analyses of DOD data.

Army and Marine Corps representatives associated with the battalion aid stations we examined commented that the aid stations were frequently moving around the theater, increasing the likelihood that paper documentation of the visits might get lost and that such visits might not always be documented because of the hostile environment. The lack of complete and accurate medical records documenting all medical care for the individual servicemember complicates the servicemember’s post-deployment medical care. For example, accurate medical records are essential for the delivery of high-quality medical care and important for epidemiological analysis following deployments. According to DOD health officials, the lack of complete and accurate medical records complicated the diagnosis and treatment of servicemembers who experienced post-deployment health problems that they attributed to their military

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service in the Persian Gulf in 1990-91. DOD's Theater Medical Information Program (TMIP) has the capability to electronically record and store in-theater patient medical encounter data. However, the Iraq war has delayed implementation of the program. At the request of the services, the operational test and evaluation for TMIP has been delayed until the second quarter of fiscal year 2005.

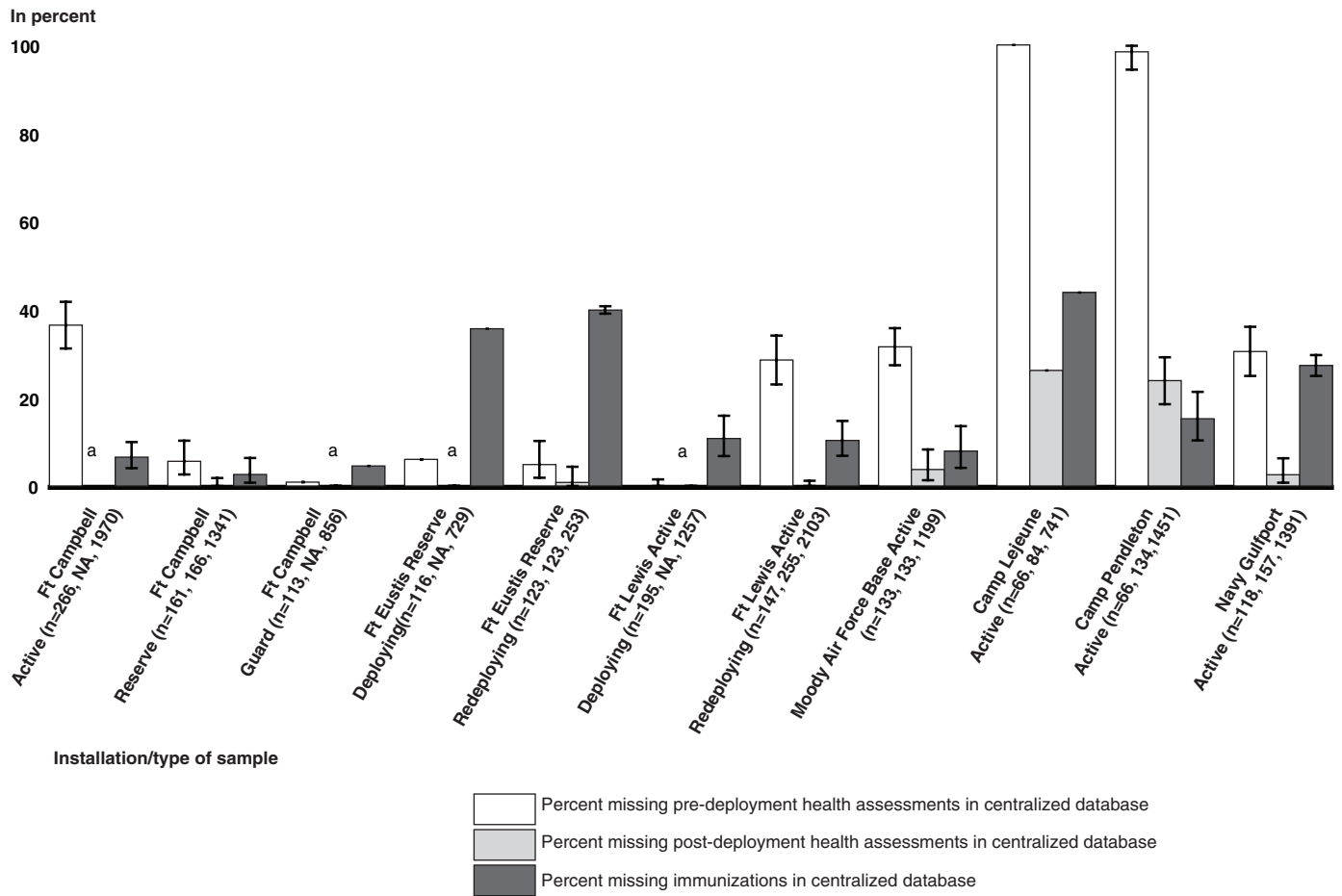
In addition to the above requirements, Public Law 105-85, 10 U.S.C. 1074f, requires the Secretary of Defense to retain and maintain health-related records in a centralized location for servicemembers who are deployed. This includes records for all medical examinations conducted to ascertain the medical condition of servicemembers before deployment and any changes during their deployment, all health care services (including immunizations) received in anticipation of deployment or during the deployment, and events occurring in the deployment area that may affect the health of servicemembers. A February 2002 Joint Staff memorandum requires the services to forward a copy of the completed pre-deployment and post-deployment health assessments to AMSA for centralized retention.<sup>24</sup>

Figure 6 shows the estimated percentage of pre- and post-deployment health assessments in servicemembers' medical records that were not available in a centralized database at AMSA. Our samples of servicemembers at the installations visited show wide variation by installation regarding pre-deployment health assessments missing from the centralized database, ranging from zero at Fort Lewis to all of the assessments at Camp Lejeune. Post-deployment health assessments were missing for small percentages of servicemembers at the installations visited, except at the Marine Corps installations visited. More specifically, about 26 percent of the post-deployment health assessments at Camp Lejeune and 24 percent at Camp Pendleton were missing from the centralized database. Immunizations missing from the centralized database that we found in the servicemembers' medical records ranged from 3 to 44 percent for the servicemembers in our samples.

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<sup>24</sup> Office of the Chairman, The Joint Chiefs of Staff, Memorandum MCM-0006-02, "Updated Procedures for Deployment Health Surveillance and Readiness," February 1, 2002.

**Figure 6: Percent of Health Assessments and Immunizations Found in Servicemembers' Medical Records That Were Not Found in the Centralized Database**



Source: GAO analyses of documentation from servicemember medical records and DOD medical databases.

Notes: [ ] = 95 percent confidence interval, upper and lower bounds for each estimate. Representations of data without confidence intervals indicate that the sample represents 100 percent of the eligible population.

<sup>a</sup>Not applicable for post-deployment health assessments since servicemembers were still deployed at the time of our review.

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DOD officials believe that automation of deployment health assessment forms and recording of servicemember immunizations will improve the completeness of deployment data in the AMSA centralized database, and DOD has ongoing initiatives to accomplish these goals. DOD is currently implementing worldwide a comprehensive electronic medical records system, known as the Composite Health Care System II, which includes pre- and post-deployment health assessment forms and the capability to electronically record immunizations given to servicemembers.<sup>25</sup> Also, the Assistant Secretary of Defense for Health Affairs has established a Deployment Health Task Force whose focus includes improving the electronic capture of deployment health assessments. According to DOD, about 40 percent of the Army's pre-deployment health assessments and 50 percent of the post-deployment health assessments sent to AMSA since June 1, 2003, were submitted electronically. DOD officials believe that the electronic automation of the deployment health-related information will lessen the burden of installations in forwarding paper copies and the likelihood of information being lost in transit.

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### Army and Air Force Compliance with Deployment Health Surveillance Policies Appears Better

Although the number of installations we visited was limited and different than those in our previous review with the exception of Fort Campbell, the Army and Air Force compliance with force health protection and surveillance policies for active-duty servicemembers in OIF appears to be better than for those installations we reviewed<sup>26</sup> for OJG and OEF.<sup>27</sup> To provide context, we compared overall data from Army and Air Force active duty servicemembers' medical records reviewed for OEF/OJG with OIF, by aggregating data from all records examined in these two reviews to provide some perspective and determined that:

- Lower percentages of Army and Air Force servicemembers were missing pre- and post-deployment health assessments for OIF.
- Higher percentages of Army and Air Force servicemembers received required pre-deployment immunizations for OIF.

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<sup>25</sup> DOD plans to deliver full capability to all health facilities at all installations by 2008.

<sup>26</sup> [GAO-03-1041](#).

<sup>27</sup> In comparing compliance rates for OIF and OEF/OJG, the data for OIF were limited in some instances to only one sample at one installation. We caution that the reader should recognize the limitations of this comparison.

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- Lower percentages of deployment health-related documentation were missing in the servicemembers' permanent medical records and at DOD's centralized database for OIF.

Because our previous report on compliance with requirements for OEF and OJG focused only on the Army and Air Force, we were unable to make comparisons for the Navy and Marine Corps.

## Health Assessments

Our data indicate that Army and Air Force compliance with requirements for completion of pre- and post-deployment health assessments for servicemembers for OIF appears to be much better than compliance for OEF and OJG for the installations examined in each review. In some cases, the services were in full compliance. As before, we aggregated data from all records examined in the two reviews and determined, among the Army and Air Force active duty servicemembers we reviewed for OIF compared to those reviewed for OEF/OJG, the following:

### **Pre-deployment Health Assessments**

- Army servicemembers missing pre-deployment health assessments was an average of 14 percent for OIF contrasted with 45 percent for OEF/OJG.
- Air Force servicemembers missing pre-deployment health assessments was 8 percent for OIF contrasted with an average of 50 percent for OEF/OJG.

### **Post-deployment Health Assessments**

- Army servicemembers missing post-deployment health assessments was 0 percent for OIF contrasted with an average of 29 percent for OEF/OJG.
- Air Force servicemembers missing post-deployment health assessments was 4 percent for OIF contrasted with an average of 62 percent for OEF/OJG.

## Immunizations and Other Health Requirements

Based on our samples, the Army and the Air Force had better compliance with pre-deployment immunization requirements for OIF as compared to OEF and OJG. The aggregate data from each of our OIF samples indicates that an average of 68 percent of Army active duty servicemembers received all of the required immunizations before deploying for OIF, contrasted with an average of only 35 percent for OEF and OJG. Similarly, 98 percent of Air Force active duty servicemembers received all of the required immunizations before deploying for OIF, contrasted with an average of 71 percent for OEF and OJG. The percentage of Army active



duty and Air Force servicemembers missing two or more immunizations appears to be markedly better, as illustrated in table 4.

**Table 4: Percent Distribution of Servicemembers by Number of Missing Required Immunizations Prior to Deployment**

Number missing	Army Active		Air Force	
	OEF/OJG	OIF	OEF/OJG	OIF <sup>a</sup>
None	35	68	71	98
Only 1	41	26	26	2
2 or more	24	6	3	0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: GAO analyses of documentation from the sample of servicemember medical records and DOD medical databases.

<sup>a</sup>Only one sample at a single installation was available for this comparison.

**Completeness of Medical Documentation**

Our data indicate that the Army and Air Force’s compliance with requirements for completeness of servicemember medical records and of DOD’s centralized database at AMSA for OIF appears to be significantly better than compliance for OEF and OJG. Lower overall percentages of deployment health-related documentation were missing in servicemembers’ permanent medical records and at AMSA. We aggregated the data from each of our samples and depicted the results in tables 5 and 6.

**Table 5: Percent of Servicemember Health Assessments and Immunizations Found in Centralized Database That Were Not Found in Servicemembers’ Medical Records**

Service	Pre-deployment health assessments missing from medical records		Post-deployment health assessments missing from medical records		Immunizations missing from medical records	
	OEF/OJG	OIF	OEF/OJG	OIF	OEF/OJG	OIF
Army Active	54	7	38	0 <sup>a</sup>	12	1
Air Force Active	28	1 <sup>a</sup>	28	4 <sup>a</sup>	12	2 <sup>a</sup>

Source: GAO analyses of documentation from the sample of servicemember medical records and DOD medical databases.

<sup>a</sup>Only one sample at a single installation was available for this comparison.

**Table 6: Percent of Health Assessments and Immunizations Found in Servicemembers' Medical Records That Were Not Found in Centralized Database**

Service	Pre-deployment health assessments missing from AMSA database		Post-deployment health assessments missing from AMSA database		Immunizations missing from AMSA database	
	OEF/OJG	OIF	OEF/OJG	OIF	OEF/OJG	OIF
Army Active	52	23	40	0 <sup>a</sup>	62	9
Air Force Active	26	32 <sup>a</sup>	49	4 <sup>a</sup>	7	8 <sup>a</sup>

Source: GAO analyses of documentation from the sample of servicemember medical records and DOD medical databases.

<sup>a</sup>Only one sample at a single installation was available for this comparison.

The data appear to indicate that, for active duty servicemembers, the Army and the Air Force have made significant improvements in documenting servicemember medical records. These data also appear to indicate that, overall, both services have also made encouraging improvements in retaining health-related records in DOD's centralized database at AMSA, although not quite to the extent exhibited in their efforts to document servicemember medical records.

## Implementation of DOD's Deployment Health Quality Assurance Program Is Ongoing

In response to congressional mandates and a GAO recommendation, DOD established a deployment health quality assurance program in January 2004 to ensure compliance with force health protection and surveillance requirements and implementation of the program is ongoing. DOD officials believe that their quality assurance program has improved the services' compliance with requirements. However, we did not evaluate the effectiveness of DOD's deployment health quality assurance program because of the relatively short time of its implementation.

Section 765 of Public Law 105-85 (10 U.S.C. 1074f) requires the Secretary of Defense to establish a quality assurance program to evaluate the success of DOD's system for ensuring that members receive pre-deployment medical examinations and post-deployment medical examinations and that recordkeeping requirements are met. In May 2003, the House Committee on Armed Services directed the Secretary of Defense to take measures to improve oversight and compliance with force health protection and surveillance requirements. Specifically, in its report accompanying the Fiscal Year 2004 National Defense Authorization Act, the Committee directed the Secretary of Defense to establish a quality

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control program to assess implementation of the force health protection and surveillance program.<sup>28</sup>

In January 2004, the Assistant Secretary of Defense for Health Affairs issued policy and program guidance for the DOD Deployment Health Quality Assurance Program. DOD's quality assurance program requires:

- Periodic reporting on pre- and post-deployment health assessments. AMSA is required to provide (at a minimum) monthly reports to the Deployment Health Support Directorate (Directorate) on deployment health data. AMSA is providing the Directorate and the services with weekly reports on post-deployment health assessments and publishes bi-monthly updates on pre- and post-deployment health assessments.
- Periodic reporting on service-specific deployment health quality assurance programs. The services are required to report (at a minimum) quarterly reports to the Directorate on the status and findings of their respective required deployment health quality assurance programs. Each service has provided the required quarterly reports on its respective quality assurance programs.
- Periodic visits to military installations to assess deployment health programs. The program requires joint visits by representatives from the Directorate and from service medical departments to military installations for the purpose of validating the service's deployment health quality assurance reporting. As of September 2004, Directorate officials had accompanied service medical personnel to an Army, Air Force, and Marine Corps installation for medical records review. Directorate officials envision continuing quarterly installation visits in 2005, with possible expansion to include reserve and guard sites.

The services are at different stages of developing their deployment quality assurance programs. Following the issuance of our September 2003 report<sup>29</sup> and subsequent testimony<sup>30</sup> before the House Committee on Veterans' Affairs in October 2003, the Surgeon General of the Army directed that the U.S. Army Center for Health Promotion and Preventive Medicine (the Center) lead reviews of servicemember medical records at selected Army installations to assess compliance with force health protection and surveillance requirements. As of September 2004, the

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<sup>28</sup> H.R. Rep. No. 108-106 at 336 (2003).

<sup>29</sup> [GAO-03-1041](#).

<sup>30</sup> [GAO-04-158T](#).

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Center had conducted reviews at 10 Army installations. Meanwhile, the Center developed the Army's deployment health quality assurance program that parallels closely the DOD's quality assurance program. According to a Center official, this quality assurance program is currently under review by the Surgeon General.

In the Air Force, public health officers at each installation report monthly compliance rates with force health protection and surveillance requirements to the office of the Surgeon General of the Air Force. These data are monitored by officials in the office of the Air Force Surgeon General for trends and for identification of potential problems. Air Force Surgeon General officials told us that, as of May 2004, the Air Force Inspector General's periodic health services inspections—conducted every 18 to 36 months at each Air Force installation—includes an examination of compliance with deployment health surveillance requirements. Also, the Air Force Audit Agency is planning to examine in 2004 whether AMSA received all of the required deployment health assessments and blood samples for servicemembers who deployed from several Air Force installations.

According to an official in the office of the Surgeon General of the Navy, no decisions have been reached regarding whether periodic audits of servicemember medical records will be conducted to assess compliance with DOD requirements. DOD's April 2003 enhanced post-deployment health assessment program expanded the requirement for post-deployment health assessments and post-deployment blood samples to all sea-based personnel in theater supporting combat operations for Operations Iraqi Freedom and Enduring Freedom. Navy type commanders (e.g., surface ships, submarine, and aircraft squadrons) are responsible for implementing the program.

The Marine Corps has developed its deployment health assessment quality assurance program that is now under review by the Commandant of the Marine Corps. It reemphasizes the requirements for deployment health assessments and blood samples and requires each unit to track and report the status of meeting these requirements for their servicemembers.

At the installations we visited, we observed that the Army and Air Force had centralized quality assurance processes in place that extensively involved installation medical personnel examining whether DOD's force health protection and surveillance requirements were met for deploying/redeploying servicemembers. In contrast, we observed that the Marine Corps installations did not have well-defined quality assurance processes

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for ensuring that the requirements were met for servicemembers. The Navy installation visited did not have a formal quality assurance program; compliance depended largely on the initiative of the assigned medical officer. We believe that the lack of effective quality assurance processes at the Marine Corps installations contributed to lower rates of compliance with force health protection and surveillance requirements. In our September 2003 report, we recommended that DOD establish an effective quality assurance program and we continue to believe that implementation of such a program could help the Marine Corps improve its compliance with force health protection and surveillance requirements.

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## Agency Comments and Our Evaluation

In commenting on a draft of this report, the Assistant Secretary of Defense for Health Affairs concurred with the findings of the report. He suggested that the word “Appears” be removed from the title of the report to more accurately reflect improvements in compliance with force health protection and surveillance requirements for OIF. We do not agree with this suggestion because the number of installations we visited for OIF was limited and different than those in our previous review for OEF/OJG with the exception of Fort Campbell. As pointed out in the report, the data for OIF were limited in some instances to only one sample at one installation. We believe that it is important for the reader to recognize the limitations of this comparison.

The Assistant Secretary also commented that the department is aware of variations in progress among the services and is committed to demonstrating full compliance through the continued application of aggressive quality assurance measures. He further commented that the department is focusing on and supporting recent policy efforts by the Marine Corps to improve its deployment health quality assurance program. He commented that plans have been initiated to conduct a joint quality assurance visit to Camp Pendleton, Calif., in early 2005, following the implementation of an improved quality assurance program and the return of significant numbers of Marines currently deployed in support of OIF.

The department’s written comments are incorporated in their entirety in appendix II.

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We are sending copies of this report to the Secretary of Defense; the Secretaries of the Army, the Air Force, and the Navy; and the Commandant of the Marine Corps. We will also make copies available to others upon

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request. In addition, the report is available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions regarding this report, please contact me on (202) 512-5559 or Clifton Spruill on (202) 512-4531. Key contributors to this report are listed in appendix III.

A handwritten signature in black ink that reads "Derek B. Stewart". The signature is written in a cursive style with a large initial 'D' and a long horizontal stroke at the end.

Derek B. Stewart, Director  
Defense Capabilities and Management

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# Appendix I: Scope and Methodology

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To meet our objectives, we interviewed responsible officials and reviewed pertinent documents, reports, and information related to force health protection and deployment health surveillance requirements obtained from officials at the Office of the Assistant Secretary of Defense for Health Affairs; the Deployment Health Support Directorate; the National Guard Bureau; and the Offices of the Surgeons General for the Army, Air Force, and Navy Headquarters in the Washington, D.C., area. We also performed additional work at AMSA and the U.S. Central Command.

To determine the extent to which the military services were meeting the Department of Defense's (DOD) force health protection and surveillance requirements for servicemembers deploying in support of Operation Iraqi Freedom (OIF), we identified DOD's and each service's overall deployment health surveillance policies. We also obtained the specific force health protection and surveillance requirements applicable to all servicemembers deploying to Southwest Asia in support of OIF required by the U.S. Central Command. We tested the implementation of these requirements at selected Army, Air Force, Marine Corps, and Navy installations. To identify military installations within each service where we would test implementation of the policies, we reviewed deployment data showing the location of units, by service and by military installation that deployed to Southwest Asia in support of OIF or redeployed from Southwest Asia in support of OIF from June 1, 2003, through November 30, 2003.<sup>1</sup> After examining these data, we selected the following military installations for review of selected servicemembers' medical records, because the installations had amongst the largest numbers of servicemembers who deployed or re-deployed back to their home unit from June 1, 2003, through November 30, 2003:

Army:

- Fort Lewis, Wash.
- Fort Campbell, Ky.
- Fort Eustis, Va.<sup>2</sup>

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<sup>1</sup> We selected this time frame after consultation with service and Deployment Health Support Directorate officials, because it was after the revised DOD policy requiring an enhanced post-deployment health assessment and a post-deployment blood serum sample effective in May 2003.

<sup>2</sup> We selected Fort Eustis, Va., because Army reserve units had mobilized at the installation for deployments to Iraq in support of OIF.

Marine Corps:

- Camp Lejeune, N.C.
- Camp Pendleton, Calif.

Air Force:

- Moody Air Force Base, Ga.

Navy:

- Naval Construction Battalion Center, Gulfport, Miss.

In comparing compliance rates for OIF with those for Operation Enduring Freedom (OEF) and Operation Joint Guardian (OJG), we reviewed active duty servicemembers' medical records for Army servicemembers and Air Force servicemembers at selected installations. For OIF, we reviewed active duty Army servicemembers' medical records at Fort Campbell and Fort Lewis and active duty Air Force servicemembers at Moody Air Force Base. For OEF and OJG, we reviewed active duty Army servicemembers' medical records at Fort Drum and Fort Campbell and active duty Air Force servicemembers at Travis Air Force Base and Hurlburt Field.

Due to the length of Army deployments in support of OIF, we sampled two groups at the military installations consisting of (1) servicemembers who deployed within the selected time frame and (2) servicemembers who re-deployed back to their home unit within the selected time frame.

For the selected military installations, we requested officials in the Deployment Health Support Directorate, in the services' Surgeon General offices, or at the installations to provide a listing of those active-duty servicemembers who deployed to Southwest Asia in support of OIF for 30 or more continuous days to areas without permanent U.S. military treatment facilities or redeployed back to the military installation from June 1, 2003, through November 30, 2003. For Army reserve and National Guard servicemembers, we requested listings of those servicemembers who deployed during the period June 1, 2003, through January 31, 2004, and those servicemembers who redeployed from Southwest Asia in support of OIF from June 1, 2003, through December 31, 2003.

For Marine Corps servicemembers at Camp Lejeune and Camp Pendleton, we modified our selection criteria to draw one sample because a number of servicemembers met the definition for both deployment and



redeployment within our given time frames. Specifically, servicemembers at these installations had both deployed to Southwest Asia in support of OIF and redeployed back to their home unit from June 1, 2003, through November 30, 2003, staying for 30 or more continuous days.

For our medical records review, we selected samples of servicemembers at the selected installations. Five of our servicemember samples were small enough to complete reviews of the entire universe of medical records for the respective location. For the other locations, we drew probability samples from the larger universe. In all cases, records that were not available for review were researched in more detail by medical officials to account for the reason for which the medical record was not available so that the record could be deemed either in-scope or out-of-scope. For installations in which a sample was drawn, all out-of-scope cases were then replaced with another randomly selected record until the required sample size was met. For installations in which the universe was reviewed, the total number in the universe was adjusted accordingly. There were four reasons for which a medical record was unavailable and subsequently deemed out-of-scope for purposes of this review:

1. **Charged to patient.** When a patient goes to be seen in clinic (on-post or off-post), the medical record is physically given to the patient. The procedure is that the medical record will be returned following their clinic visit.
2. **Expired term of service.** Servicemember separates from the military and their medical record is sent to St. Louis, Missouri, and therefore not available for review.
3. **Permanent change of station.** Servicemember is still in the military, but has transferred to another base. Medical record transfers with the servicemember.
4. **Temporary duty off site.** Servicemember has left military installation, but is expected to return. The temporary duty is long enough to warrant medical record to accompany servicemember.

There were a few instances in which medical records could not be accounted for by the medical records department. These records were deemed to be in-scope, counted as non-responses, and not replaced in the sample. The number of servicemembers in our samples and the applicable universe of servicemembers for the OIF deployments at the installations visited are shown in table 7.

**Table 7: Servicemember Sample Sizes at Each Visited Installation**

<b>Installation (type of sample)</b>	<b>Sample</b>	<b>Universe</b>
<b>Fort Campbell</b>		
Tennessee Army National Guard (deploying sample)	125	125
Reserve (re-deploying sample)	166	197
Active duty (deploying sample)	300	1,797
<b>Fort Eustis</b>		
Reserve (deploying)	116	116
Reserve (re-deploying)	127	140
<b>Fort Lewis</b>		
Active duty (deploying sample)	195	370
Active duty (re-deploying sample)	255	594
<b>Camp Lejeune</b>		
Active duty sample	90	90
<b>Camp Pendleton</b>		
Active duty sample	180	391
<b>Moody Air Force Base</b>		
Active duty (re-deploying sample)	146	204
<b>Naval Construction Battalion Center, Gulfport, MS</b>		
Active duty (re-deploying sample)	162	292
<b>Total</b>	<b>1,862</b>	<b>4,316</b>

Source: GAO.

Because we followed a probability procedure based on random selections, our sample is only one of a large number of samples that we might have drawn from the sampled installations. Because each sample could have provided different estimates, we express our confidence in the precision of our particular sample’s results as a 95 percent confidence interval (e.g., plus or minus 5 percentage points). This is the interval that would contain the actual population value for 95 percent of the samples we could have drawn. As a result, we are 95 percent confident that each of the confidence intervals in this report will include the true values in the study population. The 95 percent confidence intervals for percentage estimates are presented along with the estimates in figures and tables in this report.

At each sampled location, we examined servicemember medical records for evidence of the following force health protection and deployment health-related documentation required by DOD's force health protection and deployment health surveillance policies:

- Pre- and post-deployment health assessments, as applicable;
- Tuberculosis screening test (within 1 year of deployment);
- Pre-deployment immunizations:
  - hepatitis A;
  - influenza (within 1 year of deployment);
  - measles, mumps, and rubella;
  - polio;
  - tetanus-diphtheria (within 10 years of deployment); and
  - typhoid (within 5 years of deployment); and
- Immunizations required prior to deployment or in theater:
  - anthrax (at least one immunization); and
  - smallpox

To provide assurances that our review of the selected medical records was accurate, we requested the installations' medical personnel to reexamine those medical records that were missing required health assessments or immunizations and adjusted our results where documentation was subsequently identified. We also requested that installation medical personnel check all possible sources for missing pre- and post-deployment health assessments and immunizations. These sources included automated immunization sources, including the Army's Medical Protection System (MEDPROS), the Navy's Shipboard Non-tactical Automated Data Processing Automated Medical System (SAMS), and the Air Force's Comprehensive Immunization Tracking Application (CITA). In those instances where we did not find a deployment health assessment, we concluded that the assessments were not completed. Our analyses of the immunization records was based on our examination of servicemembers' permanent medical records and immunizations that were in the Army's MEDPROS, the Navy's SAMS, and the Air Force's CITA. In analyzing our review results at each location, we considered documentation from all identified sources (e.g., the servicemember's medical record, AMSA, and immunization tracking systems) in presenting data on compliance with deployment health surveillance policies.

To identify whether required blood samples were drawn for servicemembers prior to and after deployments, we requested that the AMSA staff query the DOD Serum Repository to identify whether the servicemembers in our samples had a blood sample in the repository not

older than 1 year prior to their deployment, and to provide the dates that post-deployment blood samples were drawn.

To determine whether the services were documenting in-theater medical interventions in servicemembers' medical records, we requested, at six of the seven installations visited for medical records review, the patient sign-in logs for in-theater medical care providers—such as the Army's and Marine Corps' battalion aid stations—when they were deployed to Southwest Asia in support of OIF. At the Army and Marine Corps locations, we randomly selected sick call visits from non-automated patient sign-in logs, but we randomly selected visits from the automated Global Expeditionary Medical Support (GEMS) at Moody Air Force Base and from the automated SAMs at the Naval Construction Battalion Center. We did not attempt to judge the importance of the patient visit in making our selections. For the selected patient visits, we then reviewed the servicemember's medical record for any documentation—such as the Standard Form 600—of the servicemember's visit to the in-theater medical care providers.

To determine whether the service's deployment health-related records were retained and maintained in a centralized location, we requested that officials at the AMSA query the AMSA database for the servicemembers included in our samples at the selected installations. For servicemembers in our samples, AMSA officials provided us with copies of deployment health assessments and immunization data found in the AMSA database. We analyzed the completeness of the AMSA database by comparing the deployment health assessments and the pre-deployment immunization data we found during our medical records review with those in the AMSA database. To identify the completeness of servicemember medical records, we then compared the data identified from the AMSA queries with the data we found during our medical records review.

To determine whether DOD has established an effective quality assurance program for ensuring that the military services comply with force health protection and surveillance policies, we interviewed officials within the Deployment Health Support Directorate, the offices of the services' Surgeons General, and at the installations we visited for medical records review about their internal management control processes. We also reviewed quality assurance policies and other documentation for ensuring compliance with force health protection and surveillance requirements.

We took several steps to ensure the reliability of the data we used in our review. DOD electronic lists of servicemembers who either deployed or

redeployed within certain time frames were used to generate random samples for which primary data was then collected. It was our premise that no systematic errors for inclusion or exclusion of cases in the database existed and the randomness of the sample generated controlled for those records selected for review. The final universe for which sample size was based was adjusted to account for out-of-scope cases. In addition, we took mitigating measures to (1) avoid relying exclusively on the automated databases and (2) identify and resolve inconsistencies, as described below:

**Personnel Deployment Databases.** Because of concerns about the reliability of deployment data maintained by the Defense Manpower Data Center, we requested, in consultation with officials at the Deployment Health Support Directorate, personnel deployment data from the military installations selected for medical records review. DOD officials believed that the military installations were the most reliable sources for accurate personnel deployment data because servicemembers are deployed from, or redeployed to, these sites. However, we decided to be alert for indications of errors as we reviewed servicemember medical records and to investigate situations that appeared to be questionable.

**Automated Immunization Databases.** Service policies require that immunizations be documented in the servicemember's medical record. For the most part, immunizations are documented on Department of Defense Form 2766. The services also use automated immunization systems—the Army uses MEDPROS, the Air Force uses CITA, and the Navy/Marine Corps use SAMS. We did not rely exclusively on either of these sources (Department of Defense Form 2766 or automated immunization systems). For servicemembers in our samples, we reviewed both the servicemembers' medical records and queries of the services' automated immunization system for each servicemember. If we found documentation of the required immunizations in either source, we considered the immunization documented because it was evident that the immunization was given.

**AMSA Centralized Database.** DOD policy requires that pre- and post-deployment health assessments be documented in the servicemember's medical record and also that a copy be sent to AMSA for inclusion in the centralized database. We did not rely exclusively on the AMSA centralized database for determining compliance with force health protection and surveillance policies. For servicemembers in our samples, we reviewed both the servicemember's medical record and queries of the AMSA centralized database for health assessments and immunizations for

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the servicemember. If we found documentation of the required pre- or post-deployment health assessments or immunizations in either source, we considered the servicemember as having met the requirement for health assessments and immunizations.

Our review was performed from November 2003 through August 2004 in accordance with generally accepted government auditing standards.

# Appendix II: Comments from the Department of Defense



HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301-1200

NOV 4 2004

Mr. Derek B. Stewart  
Director  
Defense Capabilities and Management  
United States Government Accountability Office  
Washington, DC 20548

Dear Mr. Stewart:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-05-120, "DEFENSE HEALTH CARE: Force Health Protection and Surveillance Policy Compliance Was Mixed, but Appears Better for Recent Deployments," dated October 20, 2004 (GAO Code 350469).

The Department concurs with the findings of this report. We are pleased your review confirmed notable improvements in compliance with force health protection and surveillance requirements for Operation Iraqi Freedom. To more accurately reflect those improvements, we would respectfully suggest the word "Appears" be removed from the title of the report.

We believe there is ample evidence that compliance clearly has improved with force health protection and surveillance requirements. We are aware of variations in progress among the Services, and are committed to demonstrating full compliance through the continued application of aggressive quality assurance measures. In particular, we are focusing on and supporting recent policy efforts by the Marine Corps to improve their deployment health quality assurance program. Accordingly, plans have already been initiated to conduct a joint quality assurance visit to Camp Pendleton, CA in early 2005, following the implementation of an improved Quality Assurance program and the return of significant numbers of Marines currently deployed in support of Operation Iraqi Freedom.

The Department appreciates the opportunity to comment on this GAO draft report. My points of contact are Dr. Michael Kilpatrick at 703-578-8510 (functional) and Mr. Gunther Zimmerman (audit liaison) at 703-681-3492.

Sincerely,

  
William Winkenwerder, Jr., MD

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# Appendix III: GAO Contact and Staff Acknowledgments

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## GAO Contact

Clifton E. Spruill (202) 512-4531

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## Acknowledgments

In addition to the individual named above, Steve Fox, Rebecca Beale, Margaret Holihan, Lynn Johnson, Susan Mason, William Mathers, Clara Mejstrik, Christopher Rice, Terry Richardson, Kristine Braaten, Grant Mallie, Jean McSween, Julia Matta, John Van Schaik, and R.K. Wild made key contributions to this report.



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