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LESSONS LEARNED? ASSURING HEALTHY INITIATIVES IN HEALTH INFORMATION TECHNOLOGY

HEARING

BEFORE THE

FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT INFORMATION, AND INTERNATIONAL SECURITY SUBCOMMITTEE

OF THE

COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS UNITED STATES SENATE

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LESSONS LEARNED? ASSURING HEALTHY INITIATIVES IN HEALTH INFORMATION TECHNOLOGY

TUESDAY, JUNE 22, 2006

U.S. SENATE,
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT,
GOVERNMENT INFORMATION, AND INTERNATIONAL SECURITY,
OF THE COMMITTEE ON HOMELAND SECURITY
AND GOVERNMENTAL AFFAIRS,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:27 p.m., in room SD–342, Dirksen Senate Office Building, Hon. Tom Coburn, Chairman of the Subcommittee, presiding.

Present: Senators Coburn and Carper.

OPENING STATEMENT OF SENATOR COBURN

Senator COBURN. The hearing will come to order. Without objection, I would like my full statement to be included in the record.

Senator CARPER. I reserve the right to object. Oh, I would not object. [Laughter.]

Senator COBURN. I apologize. I have to make a speech on the floor, so I will not be able to stay for the entire hearing.

I owned the first IBM System 3 for online inventories and used a toll-free telephone system to tell people what we could ship and when we could ship it. So I know the power, and I do not think anybody disputes the power to save lives, the power to save tremendous amounts of money, and the power to markedly improve what we know are best practices in health care standards in this country.

I enjoyed my visit at the VA. I have been to approximately 25 different organizations who are using electronic medical records. I am a proponent. I do not think anybody in the health care industry, even us older doctors, is going to be resistant to the things that we know will help us save money ourselves, improve our care, and give us time.

I am concerned, and I want to be very frank with my concern. As I look at what is happening in interoperability, my concern is it is becoming a roadblock rather than something that is helping, and let me explain that. I formerly shared a practice with four other physicians. We have not gone to an electronic medical record, and the reason we have not gone to an electronic medical record is because we know our capital investments is going to double again as soon as you all decide on standards. So whatever we buy

today is not going to work with whatever comes out, and then we are going to have to pay to have a system to make our system work. And we are not alone. The vast majority of physicians feel that way, and a lot of the hospitals who have not upgraded systems are not upgrading systems today because this has not come about.

And so my real concern is: Have we gone about this the wrong way? Everybody who has testified before us is working to accomplish the same goal. We all want the same goal. But when we dangle money from the Federal Government to say, "Come help us do this," and then we have the Federal Government saying, "Here is how we are going to do it," rather than say, "Who sold the system to VA, who sold the system to the Department of Defense, what computer companies are out there, what insurance companies, where do they get their software/hardware systems," rather than to ask those people, much like we did in the banking industry—there wasn't a government agency that created the software security analysis for the banking industry. The very fact is that the profit motives created the security, the online advancement, and the economic benefit of everything that we see happening in the financial industry today.

So my worry—and I hope to be convinced that we are not slowing down interoperable standards, because I have this trouble conceiving how it could take longer, if we took Microsoft and all these other people, and we took IBM, and we took the companies that have actually sold and written other software, and the insurance industry and some of the medical industry and the hospital industry, and say, "Go get in a room and come back in 9 months and tell us what we need to do," would that have been a better situation? Would we end up with a better product at a more timely basis? And why is it important? Because if we had health IT today, true electronic medical records, we would be saving 50,000 to 60,000 lives. And just the economic output of those 50,000 to 60,000 lives would pay for everything we are doing.

Now, we have spent a quarter of a billion dollars already on health IT interoperability. A quarter of a billion dollars. And nobody can tell me when we are going to have interoperability. Nobody will tell. And we are not going to get the movement to save those lives until those standards are set and people see some finite, fixed consistency to know that their investment is not going to have to be duplicated again before they do that. So that is my concern.

I want to thank Senator Carper. We are having this hearing at his insistence. There are tons of hearings on IT across the Hill, and he has a significant insight and investment in this issue, which I appreciate, and my hope is that by having this hearing, we can answer some of those questions and kind of move it along and look at where it ought to be.

I may differ somewhat from him. I do not think we have a top-down computer—or standard developed by the Federal Government. I think the standards that we get ought to be developed by the private industry because I think that the motivations will be better and the risk-taking will be better in terms of getting us a better product. But without that, we need a standard, and every day we do not have an interoperable standard in health care IT,

thousands of people are going to die. And the other thing that we know from the Rand Corporation studies is anywhere from 5 to 20 percent, somewhere around $300 billion of missed savings, we are passing up savings of about $300 billion a year every year we do not have IT in the health care industry. So it is important—lives, quality, and money, and time. And we need to get there, and we need to find out why we are not.

Senator Carper, I will apologize to you now for not being here. I will try to come back. It will be my effort to come back. We will be asking questions, written questions of you, and if you would be so kind as to submit those answers within 2 weeks of the time you receive them, we would very much appreciate it.

[The prepared statement of Senator Coburn follows:]

OPENING PREPARED STATEMENT OF SENATOR COBURN

THE ISSUE—WE'RE NOT WHERE WE SHOULD BE IN HEALTH INFORMATION TECHNOLOGY

Most industries are fully online and digitized. People bank electronically, shop electronically, pay their taxes electronically, plan vacations, weddings, hold videoconferences, you name it. But there's one industry that is lagging woefully behind—healthcare—and it's literally a matter of life and death that we get up to speed. June 5–8 was National Health IT Week. It's time that every week was health IT week.

The need is clear and the benefits of sharable—but secure—health IT products are many: All your doctors and other providers for one patient can communicate, see each other's work, and work together to avoid duplication, medical errors, and drug interactions. Patients can put their whole health record on a "thumb" drive the size of, you guessed it, your thumb, and carry it with them on vacation, overseas travel, or when they switch insurers or primary care providers.

Health IT isn't just a neat idea that might have good benefits. In today's world, health IT can produce greater efficiency and fewer medical errors, with the added benefit of fantastic cost savings for patients, providers, health plans and the taxpayers who partially or fully support the system. Moving healthcare to the digital universe is no longer an option, but a necessity.

Right now, however, hardly anyone is benefiting from electronic health records because they are rarely used—even though studies estimate that a well-developed health IT system could save $81–$161 billion or more annually while greatly reducing sickness and death, medical errors and adverse drug events in patients.

THE COST—THE FEDERAL INVESTMENT IN HIT HAS BEEN SIGNIFICANT—BUT THE RESULTS ARE FEW

However, I don't think the lack of electronic health records is due to a lack of spending. In fact, the U.S. enormous investment in health care is staggering: In 2006, total health spending is expected to approach $2.2 trillion and account for more than 16 percent of gross domestic product (GDP). We spend substantially more than other developed countries, both per capita and as a share of GDP.

Of the billions of tax dollars spent on discretionary and mandatory health spending, information technology is not the poor step-child when it comes to Federal health investments—in fact, the government has spent an estimated $169 million this year alone on HIT initiatives. According to a March 2006 GAO report, the Office of the National Coordinator for Health IT has awarded $42 million in contracts intended to advance the use of health IT, while the Bush Administration has pledged $100 million for a national electronic Health Record system. On January 27, 2006, President Bush asked for an additional $50 million for the Office of the National Coordinator for HealthIT, and his 2006 budget called for increasing funding for $125 million for demonstration projects.

THE PLAYERS—DOD AND VA AS STANDARD BEARERS IN THE RACE TO WIDELY ACCESSIBLE ELECTRONIC HEALTH RECORDS?

But HHS isn't the only game in town. Many regard the Department of Veterans' Affairs and the Department of Defense as standard bearers for health information technology due in part to their joint efforts to share medical records and, not least,

the fact that they care for a combined 14.2 million active military and retired veterans. The services the VA and the DOD deliver to our armed forces are vital to our national security, and some have commended the VA for some of the agency's cutting edge technologies and best practices development.

The price for innovation and delivery of services at these two agencies is not cheap, however: The VA requested about $2.1 billion for its FY06 Information Technology programs, and has requested a new system and an additional $3.5 billion in funds to overhaul their current network over the next 10 years. DOD's health care costs have doubled over the past 5 years to $38 billion in 2006, accounting for 8 percent of DOD expenses. If current trends continue, the department would spend $64 billion in 2015, accounting for 12 percent of DOD's costs.

THE APPROPRIATE FEDERAL ROLE

As usual, the private sector—where the bottom line drives performance—is the place where innovation must grow fastest and best. I don't want to fetter the private providers, facilities, and health plans with too much government meddling in their efforts. There is an appropriate role for the Federal Government in providing leadership for data standard-setting and creating incentives for publicly funded healthcare to go digital. However, imposing a top-down model like the single-payer VA or TriCare systems, can't work in the private sector where most people get their health care and want to keep getting their healthcare. The Office of Personnel Management (OPM) recently reported that the best way to encourage providers to adopt HIT is to promote the conditions for a free market. Some would like the Federal Government to try to replace that vibrant market with the roll-out of a one-size-fits-all interoperable government health IT system. Those waiting for such a system will be waiting a long time, given the slow progress we've seen so far.

And that's probably a good thing, because the private sector isn't waiting around to get moving on HIT. Kaiser Permanente, which serves 3 million more people than the VA, has launched a 10-year, $3 billion computer overhaul. IBM testified at a recent House hearing that their use of employee electronic health records played a major part in lowering premiums and keeping employees health. IBM health care premiums are 6 percent lower for family coverage and 15 percent lower for single coverage than industry norms, and employee illness rates are consistently lower than industry levels.

IN THE WAKE OF POOR MANAGEMENT, INNOVATION FLOUNDERS

While it is clear to me that there is an enormous amount of effort and money being poured by the Federal Government into the health information technology field, I'm perplexed as to why we haven't yet achieved more measurable results. Some have called the VA the model of IT perfection, but the history there of wasted funds and large cost and time overruns is less impressive than you might think. I hope we can get a clearer picture from some of our witnesses today. I don't want to criticize the services that our veterans receive—and they truly deserve our thanks and care—but I think we can do a better job serving those veterans and the rest of America's taxpayers by better managing our resources and investments.

Both VA and DOD lack detailed management plans for health IT, which increases the risk of unaccountability. In fact, two recent GAO reports use the phrase "severely challenged" when describing VA and DOD long-term efforts to provide a virtual medical record in which data are in a format that can be acted upon in real time. Both VA and the DOD have been criticized for missed milestones and major expenses related to their two newest projects, Health*e* Vet and ALHTA [*"ALTA"]. Healthe*Vet in particular has received some particularly scathing reviews from independent review Carnegie Mellon suggesting that the "VA faces unparalleled challenges to manage change to deliver an operationally viable [Health*e*Vet] by 2010," and that the plan to spend billions to modernize the health care system for that delivers services to 5 million veterans has unacceptably high risks.

CONCLUSION

It's not fair to ask future generations—your grandchildren and mine—to pick up the tab tomorrow for systems and plans that don't work well or on time today. I know that our witnesses have the very best wishes in their hearts for the well-being of our Nation's honorable veterans and active-duty forces. To serve them with one fraction of the competence with which they've served us, we need to ask some tough questions today. Thank you for being here, for your time and preparation.

OPENING STATEMENT OF SENATOR CARPER

Senator CARPER [presiding]. Thanks, Mr. Chairman, and the Subcommittee will stand in recess. We are going to watch Senator Coburn on a television monitor over here as he gives his speech. No, we are not going to do that. Go for it.

I am delighted that we are having this hearing. I am delighted we are having it on this subject. I am an old Navy guy. I spent about 5 years on active duty, about 18 years in the Reserves, and I remember when I got out, I graduated from Ohio State, having been a Navy ROTC midshipman. And I headed out for Pensacola for my training, my first active-duty training. And when I left Ohio State, they gave me a brown manila folder that had my medical records from my 4 years at Ohio State, my physicals and that sort of thing.

I went down to Pensacola. I turned them in, and they kept them there for—I do not know—the 6, 7, 8, 9 months that I was there. And then I left and went off to Naval Air Station, Corpus Christi, Texas, and they gave me back my brown manila folder, and I carried it with me in my Volkswagen Karmann Ghia to Corpus Christi Naval Air Station. I went to Corpus Christi, and I turned it in, and they kept it until I finished up. Then I went to North Iowa Naval Air Station, Coronado, and I carried it with me over there, and I turned it in. I left there and I went up to Moffett Field, California, near Mountain View, Palo Alto, Menlo Park, that area, a place where I revisited just 3 weeks ago and I got to stand in my old squadron. I do not know if you have ever heard of Moffett Field, but on Route 101, just south of San Francisco, is a big old naval air station. It is now a NASA base. It is called Ames. But they still have these three huge blimp hangars where we have our Navy P–3 aircraft. I got to stand in my old hangar.

And the one thing I did not have with me was my old brown folder with my then thickening naval medical records. I had to go overseas. We would go overseas. We would be home for about 8 months, overseas for 6, home for 8, overseas for 6. And the whole time I was in my squadron, they kept my brown manila folder.

When I got out of the Navy in 1973, they gave it back to me. By this time it was pretty thick. And I carried it with me all the way across America in my Volkswagen Karmann Ghia. And I drove to Delaware, which I had found on a map, to go to business school. And a week after I started business school, I drove up to the VA hospital in Ellesmere, Delaware, and I gave them my brown manila folder. And it had all my medical records. I wanted to find out what I was eligible for, for benefits.

And you know what? Today, when people get out of the Navy or the Army or the Air Force or the Marine Corps and they want to go to a VA facility and find out what they are eligible for, they do not carry brown manila folders anymore, do they? They do not, because everybody has an electronic health record.

Down in Louisiana during the evacuation from Hurricane Katrina, we had a lot of people evacuated from nursing homes and hospitals, and civilians, when they tried to leave, a lot of their paper records were destroyed, as we all know. And people ended up in Houston, Baton Rouge, and even Delaware, all kinds of places, and they did not have their civilian health records anymore.

But you know who had their medical records? The people in the VA hospitals, the people in the VA nursing homes, they had them, because they had electronic health records. And they were able to—folks receiving them in the VA facilities, they knew what medicines these folks needed to take. They knew what their medical history was, their lab tests, their MRIs, all that stuff. Boy, that is a smart idea.

And it is actually not an idea that the private sector brought us. At least I do not think so. It kind of grew out of the VA, and it sort of migrated to the Department of Defense. And there is a lot there for all of us to learn.

I sort of come to this issue because I want to save lives. We are told that we may lose as many as 100,000 lives a year because of medical mistakes. It may be a little more, it might be a little less. But we lose a lot of lives. We spend a huge amount of money, as you know. We spend more money, I am told, than any other country in the world on health care, but we do not get the best results in the world. In fact, in some cases, if you look at things like longevity and life expectancy and all, you could argue we do not end up with the sort of system we are paying for.

In any event, I do not know that there are any silver bullets in life. I do not think there are any in this regard. But I am convinced we can save lives and we can save money if we can figure out how to provide throughout the delivery of health care some of the stuff that we have been doing in the VA for a while and are trying to do in the DOD.

The Chairman said that he thinks I am committed to a top-down solution here as opposed to a bottom-up, and I just want a solution. I am just interested in what works. And my hope is that today you will help provide us with what works.

Meredith, is this something I should read? Thank you. It says, "Hearing script." I used to be in the House of Representatives, and I was a Chairman of my own Subcommittee, and here I get to be the Ranking Member with Senator Coburn, which is really a lot of fun. He and I are real interested in reducing budget deficits, and when you have run into budget deficits of $300, $400 billion a year—they basically continue as far as the eye can see—we have got to look for ways to save some money, and that is one of the reasons why I am real interested in this. So save some money, save some lives, improve health care delivery, and actually provide greater job satisfaction to the folks that are delivering the health care.

Here we go, the hearing script. It says, "Bring the hearing to order." The hearing will come to order. And we have given our opening statements. The Ranking Member—that is me—has been recognized for an opening statement. And if there were other Senators here, I would recognize them. Some of them are over on the floor, probably waiting for Senator Coburn to give his statement. And we have a bunch of other Committee hearings going on, but we will have some people who drift in and out and hear what you all have to say and maybe ask a couple of questions.

I am going to ask our witnesses—and we thank you very much for coming, but I am going to ask you to limit your oral testimony to about 5 minutes, if you will. Just look for the red lights. Do you

have a red light out there that you can see? What is it right now? Is it green? Is it any color at all? Pretty soon it will be green. When you speak you will get a green light for 4 minutes, an amber for 1, and then you will get a red light. Try to wrap it up about that point in time. Some of you have done this before, so this is old hat.

But your complete written statements will be made part of our official record, and I am going to ask that we hold our questions until the entire panel has testified.

Let me just say to our panelists today, thank you for coming. You all could have been someplace else. This is real important. I think this is important for our country, for the people who live in our country, and we are grateful that you would testify before us.

The first person I want to recognize I think is from HHS. Is that right? Do you work for Governor Leavitt?

Ms. DANIEL. Yes.

Senator CARPER. Tell him an old governor sends his best. He is one of my favorite people.

We are going to hear from Jodi Daniels, Director of the Office of Policy and Research, Office of the National Coordinator for Health Information Technology at HHS. Did David Brailer work with you?

Ms. DANIEL. Yes, he was my former boss before he resigned from his position.

Senator CARPER. I just talked to him a week or so ago. Good man.

And I understand that Ms. Daniels is responsible for considering the policy implications of key health information technology activities and coordinating health information policy discussions and research within HHS. Welcome. Thank you for coming.

Ms. DANIEL. Thank you.

Senator CARPER. Second, Linda Koontz, welcome. How are you? The Director of Information Management Issues at GAO. You have testified before, haven't you? Once or twice?

Ms. KOONTZ. Maybe three times.

Senator CARPER. More than that, I bet.

But from GAO, we are delighted that you are here. We appreciate your willingness to testify on this subject, and I understand you are responsible for issues concerning the collection, the use, and the dissemination of government information in an era of rapidly changing technology. And Ms. Koontz has great responsibility at GAO for information technology management issues at various agencies, including the Department of Veterans' Affairs, Department of Housing and Urban Development, and Social Security Administration. That is a lot.

Our third witness is Carl Hendricks. I know a Carl Hendricks back home, but you are the real Carl Hendricks. We are glad that you are here. And I understand you are the Chief Information Officer for the Military Health System. Is that right?

Mr. HENDRICKS. Yes, sir.

Senator CARPER. Terrific. At the Department of Defense, and your past public service was as an Army Medical Service Corps Officer, and serving in a variety of positions spanning some 26 years of military service, with a concentration of experience in medical information technology and acquisition management. Is it Mr. Hendricks or Dr. Hendricks?

Mr. HENDRICKS. It is Mr. Hendricks.

Senator CARPER. All right. Mr. Hendricks is the principal advisor to DOD medical leaders on all matters pertaining to health information management, information technology, information protection, enterprise architecture, IT capital investment, and IT strategic planning. That is quite a bit.

Our fourth witness here today is—now, my notes here say Dr. Michael Kussman. And for some reason, we just skipped right over you, Mr. Howard, but we will come back. [Laughter.]

Dr. Michael Kussman, Deputy Under Secretary for Health——

Mr. HOWARD. I am his shadow, sir.

Senator CARPER. Is that right? Dr. Michael Kussman will be delivering testimony on behalf of the Department of Veterans' Affairs. And he is joined at the table Mr. Robert Howard. Thank you, Mr. Howard, for being here—Senior Advisor to the Deputy Secretary with concentration on business operations for the Department, and Supervisor, Office of Information and Technology, also at Veterans Affairs. And when you testify, Dr. Kussman, I am going to look to see if Mr. Howard's lips move at all. [Laughter.]

We will see how he does. We are glad that you are both here and thank you for coming.

And, finally, Dr. Ross Fletcher. who is the Chief of Staff at the Veterans Medical Center in Washington, and I understand you are going to be able to give us a demonstration as well. I have been looking forward to that. Meredith Pumphrey was telling me you were going to do that, and that would be great.

That is a little bit about who you are—this is a wonderful panel. I don't know who put this panel together, but whoever did, you did good work.

Could I ask you to go ahead and make your presentations? And, Ms. Daniels, if you do not mind being our lead-off hitter, we will start with you, and then when we are finished, we will ask some questions. But thank you all for coming.

Ms. Daniels.

TESTIMONY OF JODI G. DANIEL, J.D., M.P.H.,[1] DIRECTOR, POLICY AND RESEARCH, OFFICE OF THE NATIONAL COORDINATOR FOR HEALTH INFORMATION TECHNOLOGY, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Ms. DANIEL. Ranking Member Carper and Members of the Subcommittee, I am Jodi Daniel, and as you have mentioned, I am the Director of the Office of Policy and Research of the Office of the National Coordinator for Health Information Technology. Thank you very much for inviting me to testify today on some of our health information technology activities under way at the Department of Health and Human Services.

In April 2004, the President signed an Executive Order creating the Office of the National Coordinator (ONC) for Health IT, within HHS and called for widespread adoption of electronic health records within 10 years so that health information will follow patients throughout their care in a seamless and secure manner. The

[1] The prepared statement of Ms. Daniel appears in the Appendix on page 33.

goal is to improve the quality of care and provide better information for patients and physicians to improve efficiency.

Reaching these ambitious goals requires cooperation among Federal agencies and cooperation with the private sector. ONC works closely with our Federal partners, including the Department of Defense and the Department of Veterans' Affairs, to ensure synergy in our efforts and to avoid unnecessary duplication.

Two critical challenges to realizing the President's vision for health IT are now being addressed. The first is interoperability and electronic portability of health information, and the second is electronic health records adoption, and we are looking at both of these issues in tandem.

These challenges are being met by key actions currently under way in ONC, both through infrastructure contracts that we have and through Secretary Leavitt's Federal Advisory Committee, the American Health Information Community. Last year, Secretary Leavitt announced the formation of the American Health Information Community, otherwise known as "the Community." It is a national public-private collaboration to facilitate the transition to interoperable electronic health systems in a market-led way. The Community formed work groups that were charged with making recommendations for specific achievable, near-term results in four areas: First is consumer empowerment; second, chronic care; third, electronic health records; and, fourth, biosurveillance. These work groups advanced and the community accepted recommendations on May 16, and key actions related to these and future recommendations are now under way.

In addition to the formation of the Community, HHS through ONC has issued contracts to focus on some of the health IT infrastructure issues. There are four sets of contracts that I wanted to mention.

The first, HHS awarded a contract to the American National Standards Institute to convene the Health Information Technology Standards Panel (HITSP). HITSP brings together U.S. standards development organizations and other stakeholders and is developing and implementing a harmonization process for achieving a widely acceptable and useful set of health IT standards to support interoperability among health care software applications, particularly electronic health records.

A process was implemented whereby standards were identified and developed specific to real-world scenarios or use cases. HITSP is scheduled to have named standards and implementation specifications for three use cases this September.

The second is compliance certification. HHS awarded a contract to the Certification Commission for Health Information Technology (CCHIT), to develop criteria and an evaluation process for certifying electronic health records and the infrastructure or network components through which they interoperate. The contract will address three areas of certification: Ambulatory electronic health records, inpatient electronic health records, and the infrastructure components.

CCHIT has made significant progress toward the certification of commercial ambulatory electronic health records, and in July of this year, the first set of ambulatory electronic health record prod-

ucts will be certified. Certification will reduce risk by helping buyers of health IT determine whether products meet minimum requirements.

Third, HHS has awarded contracts to four consortia of health care and health IT organizations to develop prototype architectures for a Nationwide Health Information Network. The goal is to develop real solutions for nationwide health information exchange by stimulating the market through a collaborative process and the development of network functions. In June 2006, this month, the contractors submitted proposed functional requirements for a NHIN to HHS, and there is going to be a public meeting next week to review those and to try to sort through those functional requirements from the four different contractors.

Finally, HHS has awarded a contract to RTI International, which is working with the National Governors Association Center for Best Practices to form the Health Information Security and Privacy Collaboration. Through this contract, health care stakeholders, including consumers, within and across 34 States and territories will assess variations in organization-level business policies and State laws that affect health information exchange. These State subcontracts will work with stakeholders within their States to then identify and propose practical solutions to address this variation and develop detailed plans and implementation solutions. State solutions and implementation plans will be finalized in early 2007.

Finally, there is an important initiative I wanted to mention given the Subcommittee's interest. In order to promote adoption of interoperable health IT systems, last October the Centers for Medicare and Medicaid Services and the Office of Inspector General at HHS proposed exceptions to the physician self-referral law and safe harbors to the anti-kickback statute. These proposed rules would allow hospitals and certain other health care organizations to donate hardware, software, and related training services that meet certain interoperability criteria to physicians for both e-prescribing systems and electronic health records systems.

The Department recognizes that interoperable health IT is critical in not only transforming how care may be delivered, but also in informing patients and other consumers about costs of care and some aspects of its quality.

Thank you for the opportunity to update you on the progress we are making in the area of health IT. HHS, under Secretary Leavitt's leadership, is giving the highest priority to fulfilling the President's commitment to widespread adoption of interoperable electronic health records, and it is a privilege to be a part of this transformation.

Thank you very much, and I would be happy to answer any questions.

Senator CARPER. Great. Well, thanks for that testimony, and don't go away. We will be back to ask some questions. And I am sure the Chairman will as well.

Ms. Koontz, thank you.

TESTIMONY LINDA D. KOONTZ,[1] DIRECTOR, INFORMATION MANAGEMENT ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Ms. KOONTZ. Ranking Member Carper, I am pleased to be here today to participate in the hearing on health information technology. As you know, VA and DOD are engaged in efforts to share electronic medical information, which is important in helping to ensure that active-duty military personnel and veterans receive high-quality health care. Also important in the face of current military responses to national and foreign crises, is ensuring effective and efficient delivery of veterans' benefits. This is the focus of VA's development of the Veterans Service Network (VETSNET), a modernized system to support benefits payment processes.

For the last 8 years, VA and DOD have been working to share health information. The Department's long-term goal is ambitious: Two-way, seamless sharing of virtual medical records. In a virtual medical record, data are not just displayed as in a paper record, but are computable—that is, they can trigger actions such as alerting clinicians of drug allergies. Virtual medical records are, thus, important for improving health care and patient safety, and they are the foundation of the modern health information systems that both Departments are currently developing.

Besides working on long-term goals for future systems, VA and DOD are implementing two near-term demonstration projects that exchange limited data between their existing health information systems. One of these projects has achieved the two-way exchange of health information on patients who receive care from both Departments. The second has implemented an application that electronically transferred laboratory work orders and results between the Departments. According to VA and DOD, these projects have enabled lower-cost and improved service to patients by saving time and avoiding errors.

In pursuing their longer-term objectives, the Departments have also made progress, but they still have much to do. In response to earlier GAO recommendations, VA and DOD have taken actions such as establishing a project management structure and designating a lead entity with final decisionmaking authority. Also, at the end of the month, they plan to begin a pilot to share computable data for the first time, specifically outpatient pharmacy and medication allergy information. This will support drug interaction checking and drug allergy alerts.

However, the Departments have experienced delays in their efforts to begin this exchange, originally scheduled for September 2005. According to officials, the delays occurred because implementing standards for pharmacy and drug allergy data were more complex than originally anticipated. In addition, the Departments have not yet implemented our recommendation that they develop a project management plan that clearly defines the technical and managerial processes needed to satisfy project requirements. The lack of such a plan increases project risk, including the risk of further delays.

[1] The prepared statement of Ms. Koontz appears in the Appendix on page 48.

VA has also been working to modernize the delivery of benefits through its development of VETSNET, but the pace of progress has been discouraging. VETSNET was originally initiated in 1986 to modernize VA's benefits delivery network, which the Department relies on to make benefits payments.

In 1996, after numerous false starts and approximately $300 million in cost, VA revised its strategy and narrowed its focus to modernizing only the compensation and pension system. In earlier reviews, we made numerous recommendations to improve this program's management, including a 2002 recommendation that VA develop an integrated project plan.

In 2005, the VA's CIO became concerned by continuing problems with VETSNET and arranged for an independent assessment of the Department's options for the system, including whether it should be terminated. This assessment concluded that although VETSNET faced many risks, these from management, organizational, and program issues rather than technical barriers. According to the assessment, terminating the program would not solve the underlying problems, which would continue to hamper any new or revised effort. Accordingly, the recommendation was made that the program not be terminated since its goals were as important as ever, but instead that the Department take an aggressive approach to dealing with these management and organizational problems while continuing to work on the program at a reduced pace. In this way, VA could make gradual progress on VETSNET while it made necessary improvements to its capabilities in system and software engineering and in program management.

In response to the independent evaluator as well as our recommendation, VA is now developing an integrated master plan for the compensation and pension system, which it plans to complete in August. This is a first step toward addressing the problems that have hampered the program. Until these are solved, it is uncertain when VA will be able to end its reliance on its aging benefits technology.

This concludes my statement. I would be happy to answer questions at the appropriate time.

Senator CARPER. Good. And there will be some. Thank you very much, Ms. Koontz.

Mr. Hendricks, you are next. Thanks.

TESTIMONY OF CARL E. HENDRICKS,[1] MILITARY HEALTH SYSTEM CHIEF INFORMATION OFFICER, U.S. DEPARTMENT OF DEFENSE

Mr. HENDRICKS. Ranking Member Carper, thank you for the opportunity to come in and discuss the significant achievements we have achieved within the Department of Defense as we leverage health information technology to enhance care for our beneficiaries, both in combat and back here in the States. I also appreciate the opportunity to come in and share with you the work that the DOD and the Department of Veterans' Affairs are doing in exchanging electronic health information, and in an incredibly complex spectrum of care.

[1] The prepared statement of Mr. Hendricks appears in the Appendix on page 77.

In the DOD, we are driven to ensure that our soldiers, sailors, airmen, and marines receive the same quality health care in the combat zone that they receive in our brick-and-mortar hospitals here in the States. Evidence of our success was noted by the Army Surgeon General, General Kiley, in recent testimony in his comment, in which he stated, "We have recorded the highest casualty survival rate in modern history, with more than 90 percent of those wounded surviving, many returning fully fit for continued service."

One of the components of achieving this level of success is the incorporation of health information technology. As a mark of this success, since January 2005, we have captured electronically the encounters of more than 450,000 encounters in the combat zones, and those encounters have been transmitted back to the States for Clinical Data Repository and are being included in the electronic health records of the Service members.

We are using the latest technologies in doing that. We are using handheld devices. Every medic in the combat zone carries a handheld device, and at the point of injury or illness, captures that encounter electronically. When they get back to the aid station, that is synched into the health system at the aid station and transmitted back to the States to become a part of that electronic health record.

As a point of fact, just last month we captured electronically 38,212 encounters from the combat zone, which are back in the Clinical Data Repository today. Other programs of success include the Joint Patient Tracking Application, which allow commanders and patient care providers to track the wounded Service members through the evacuation chain. More than 4,000 users of this application are using it today, and since 2003, we have tracked over 120,000 injured soldiers, sailors, airmen, and marines through the evacuation chain.

We are also using leading-edge technologies. In those cases in which soldiers, sailors, or airmen are evacuated before the synchronization of data can take place, research is ongoing for electronic dog tags to allow the information to be captured on the device, stored on the soldier's body, and go back with them during the evacuation chain. To date, we have tested this on more than 9,000 Stryker Brigade soldiers in the combat zone. Development continues on that device.

One of the key cornerstones of our success in health IT is our electronic health record, AHLTA. It provides day-to-day functions of delivering and documenting health care for our 9.2 million beneficiaries. Today, we have deployed the Armed Forces Health Longitudinal Thechology Application (AHLTA) to over 115 of our 138 sites and will have full deployment of AHLTA by the end of this calendar year. What it means is no matter which DOD hospital around the world a patient goes to, our providers will have access to their electronic health record.

I mentioned earlier about ensuring continuity of care from one level of care to the next being critical, and especially true for our Service members that are transferring to the VA. Ms. Koontz mentioned the Federal Health Information Exchange, which is a one-way push of data from the DOD to the VA. As you spoke, you carried your records with you to the VA. We have pushed the elec-

tronic records of over 3.5 million Service members to the VA at time of their separation. Of those, 2.8 million have presented to the VA for care, treatment, or claims adjudication.

We also have a Bidirectional Health Information Exchange, which enables real-time sharing of allergy, outpatient medication, demographics, lab, and radiology data. It is currently deployed to 14 DOD sites, with more deployments going this year.

The DOD Clinical Data Repository/VA Health Data Repository, referred to as "CHDR," is established an interoperability of computable data between the two clinical data repositories—the Clinical Data Repository of the DOD and the Health Data Repository of the VA. That has been tested in the lab environment and will go live this month in El Paso, Texas, for on-site testing.

Senator Carper, I would like to thank you again for the opportunity to discuss our progress. The DOD holds a strong commitment to leverage electronic health information in support of the Nation's heroes and families. Much has been accomplished, and the groundwork has been laid for even greater progress in the future.

This concludes my comments, and I stand subject to your questions.

Senator CARPER. Thanks very much for your comments.

Before I recognize Dr. Kussman, one of the incidents that occurred about a month and a half ago now in Iraq, actually in Fallujah, involved a marine who is a former member of my staff, my campaign staff and my Senate staff. He was shot in Fallujah by a sniper's rifle, and it was buried right in his neck, right by his Adam's apple. It missed it, severed his carotid artery completely, nipped his jugular vein, came out right by his spinal cord, missed it. And he ran to get behind some cover, and one of his colleagues, marine colleagues, radioed for help but got a Navy corpsman, found him not far away in a Humvee. And the Navy corpsman came, administered first aid, they got him to a Fallujah hospital within less than 15 minutes. A surgeon went to work on him and was able to put his artery back together to save his life, flew him to Germany, flew him to Bethesda, and about 2 weeks ago he walked out of Bethesda Hospital alive. And he has impairment of his shoulders, has nerve damage that does not allow him to move his right shoulder, but thank God he is alive. And last week, the Commandant of the Marine Corps in the building just next door, the Russell Building, gave him the Purple Heart. It was great, very special. But just from our own family here in the Senate, having almost lost one of our own, we are just deeply grateful for the extraordinary medical care and attention that he received on the spot, just like that, and it literally saved his life. I know he is just one of many, so thank you.

Dr. Kussman.

TESTIMONY OF MICHAEL KUSSMAN, M.D.,[1] DEPUTY UNDER SECRETARY FOR HEALTH, U.S. DEPARTMENT OF VETERANS' AFFAIRS, ACCOMPANIED BY ROBERT HOWARD, SUPERVISOR, OFFICE OF INFORMATION AND TECHNOLOGY, U.S. DEPARTMENT OF VETERANS' AFFAIRS

Dr. KUSSMAN. Thank you, and good afternoon, Ranking Member Carper. On behalf of the Department of Veterans' Affairs, I am pleased to take this opportunity to discuss the comprehensive electronic medical record used by VA to provide world-class medical care and to support our veterans. I am also pleased to discuss the significant progress we have made toward the development of secure, interoperable technologies to achieve sharing of health data within the Department of Defense. VA and DOD are working closely together to ensure the seamless transition of medical services for our men and women returning from Operation Iraqi Freedom and Operation Enduring Freedom.

VistA, or the Veterans Health Information Systems and Technology Architecture, is recognized as the most comprehensive electronic health record in use anywhere. It allows VA to provide better, safer, and more consistent care to more than 5.3 million veterans in all VA hospitals, outpatient clinics, and nursing homes—more than 1,400 points of care all across the Nation. Using VistA, doctors and other clinicians can easily pull up computerized patient data, including images. Clinicians can use the system to update a patient's history, place orders, and review test results. They can quickly review information from previous visits, access clinical guidelines, and view medical publications to find the latest treatments in medication. All of this information is available wherever the patients are seen—in acute settings, clinics, exam rooms, nursing stations, and offices. Tools such as electronic health care prompts, computerized order entry, and barcode-assisted medication administration systems have largely eliminated transcription and medication errors while strengthening patient safety.

VA is proud of its leadership role in health information technology, and we are continuing to enhance VistA. We are now working to supplement the capabilities of VistA to capture the advances of new and emerging health care technology and improved care for veterans. The next generation of VistA will have the flexibility to better support integrated ambulatory care, home-based health care, tele-health, and improved response times. Next generation VistA will strengthen the existing privacy and security protections, and it will support a more robust sharing of patient data with our partners in the Department of Defense and other care providers. Like the current version, next generation VistA will remain in the public domain and available to other Federal agencies and providers in rural and underserved communities.

VA and DOD efforts to achieve interoperable health technologies are guided by the VA/DOD Joint Electronic Health Records Interoperability Plan—known as JEHRI. Since we began implementation in 2002, we have steadily progressed toward the final goal of exchanging standardized computable health data between our Departments. The first phase of the plan, FHIE, as you heard, re-

[1] The prepared statement of Dr. Kussman appears in the Appendix on page 89.

sulted in the development of a one-way flow of electronic DOD health information to the VA, which allowed our clinicians to view all pertinent DOD historical electronic information. Later, we developed the capability to support the real-time bidirectional exchange of electronic medical records or data between DOD and VA hospitals and clinics. The bidirectional system delivers electronic outpatient pharmacy data, laboratory reports, radiology reports, and food and drug allergy information.

The next phase of our plan includes the sharing of computable allergy and pharmacy data between our next generation systems. Both VA and DOD are in the process of working together to ensure that our next generation data repositories now under development are interoperable and capable of sharing standardized data. Thus far, we have demonstrated this capability in a laboratory test environment and are preparing to begin production testing of the software in July 2006.

The Departments also are working together as VA modernizes its existing imagine solution and DOD explores acquisition of new imaging technology. The Departments are actively exploring a collaborative imaging solution that will use VA technology to support shared access to images such as radiologic studies in both DOD and VA facilities. The bidirectional exchange of electronic health data between different health information systems is a monumental accomplishment. The work is dependent upon the adoption and implementation of health data and communications standards. VA and DOD are breaking new ground in this area and remain at the forefront of health data collaboration and exchange activities within the Federal Government.

I now wish to briefly discuss the existing protections that ensure that our DOD/VA health data exchange initiatives are secure and fully protect the personal health information of our veterans and military beneficiaries.

Our sharing systems are in full compliance with the VA Office of Cyber Security policies and DOD Information Assurance policies. These projects also comply with the privacy regulations contained in the Privacy Act and the Health Insurance Portability and Accountability Act meant to protect the unauthorized use or transmission of personal health information. To ensure the highest level of protection for these clinical data, we employ a double-encryption method using a hardware-based Virtual Private Network (VPN). After having passed an initial and subsequent review of security protections, our systems framework received a VA-issued renewal of the Authority to Operate in December 2005. DOD information security officers concurred with and accepted this rigorous review. As sharing partners, VA and DOD take very seriously our duty to protect the sensitive health data entrusted to us in the course of caring for veterans and military beneficiaries.

Health information technology is not about technology, but it is about improving the quality of care and health outcomes for patients. VA is fully committed to ongoing collaboration with VA to do just that.

Sir, this completes my testimony, but my colleagues and I are happy to answer any questions that you or the Chairman, if he returns, or any other Member who comes have.

Senator CARPER. OK, good. Dr. Kussman, thank you very much.

Dr. Ross Fletcher, welcome, sir. Thank you. We are glad you are here. What are you going to show us today?

TESTIMONY OF ROSS FLETCHER, M.D., CHIEF OF STAFF, VETERANS MEDICAL CENTER, WASHINGTON, DC

Dr. FLETCHER. Thank you. What I plan to show is the electronic health record that we use at our hospital and across the system everywhere.

Senator CARPER. Tell us a little bit about your hospital, if you would.

Dr. FLETCHER. We can see you from our hospital. It is straight up North Capitol Street, and I am at the VA in Washington, DC, and we are tertiary care hospital that does cardiac surgery and a wide range of activities.

We have been involved in the IT process for many years and have often instituted things first in our place, but we accept everything that has been done elsewhere in the system. So we now have a system that we feel very proud of and we enjoy a lot and tend to demonstrate to lots of people who come by.

Senator CARPER. Good. Well, thanks. We are glad you are here and look forward to your presentation.

Dr. FLETCHER. The lights can be dimmed.

Senator CARPER. Can the lights be dimmed?

Dr. FLETCHER. It would be nice.

Senator CARPER. Apparently, if we dim the lights, then we are unable to record.

Dr. FLETCHER. That is fine. I think that shows up relatively well. This is the way the record shows up when we open it up to a given patient. We have an active problem list, active medications. We have a list of their allergies and postings and their vital signs.

We have tabs that are very user friendly. The nice thing about the system at the moment is the intern or resident can come, without knowing anything about the system, and be operating it very quickly, maybe 2 hours of training at the most, and be taking care of patients that day, that evening, and liking it better than the systems they have been on in the past. And that we have shown many times.

If we go across the tabs, we see the problem list so that the problems can be changed at will. We have medications and all of the orders are done in the system. We are able to do inpatient, outpatient medication orders, imaging orders. If I simply click on "Imaging," you can see that if I want general radiology, I can get it. Chest, PA, and lateral is now being ordered. If I say accept the order, it is in my Radiology Department. The patient goes down and gets his X-ray, just having told the clerk at the desk who he is.

If I want to order medications, I simply order these. I have order sets as well, which are typical for our hospital, but we are using the standard software across the system.

If I go into "Notes," I can immediately see the notes that are available. I can see a list of all the notes that are here. And if I open up our imaging system by, in this instance, clicking down

here, you can see that we have EKGs, X-rays on the patient, as well as any other pieces of data.

If I move on to the discharge summaries, you can see that those are listed. If I go into "Labs," we have the ability to look at each lab report that has come through, like you might see in a paper record. But, more importantly, I can take that information into a worksheet and ask for the data for all time for this particular patient. It is now in a spread sheet where I can easily see it in a graphic format, the sodiums being quite low when the patient first came in.

If I want to see any of the other values, I can see that the hemoglobin was also quite low, and the white count was quite high. This patient had an elevated white count in the face of paralysis on the right leg first and then on the left leg second. He had been in another hospital for 2 months and was sent over to us. We did draw a Lyme disease titer, found out that he had deer tick disease, gave him the appropriate antibiotic, dropped his white count down, and he was able to walk in about 3 months.

You can see that when he came in, his weight was quite low—again, we go to "All Results"—and came gradually up to normal weights, but started to have other kinds of problems out over to the right.

I can expand that by simply clicking my zoom button, and he came in with a pleural effusion on his right side. I will move this over slightly. And when we saw the pleural effusion—this is a pleural effusion he had on the other side. As I go up and look at the X-rays, you can see that I can see fairly marked changes. Indeed, he had a pleural effusion on the other side, which I can simply put up next to that X-ray and compare.

When he was on the left side, I simply asked him how he slept. He said, "I sleep on the left side." That fits. We thought he had heart failure. Usually you have effusions on both sides. But I knew that he had one on the right side before, and I asked him if he always sleep on his left side. He said, "No. I used to sleep on my right side until I had a hip fracture," which you can actually see by the X-ray in place here. And the fix for that was to put a hip nail in place. And you can see that comparison.

The heart failure that he had was easily elucidated by an MRI. We saw when we did an MRI that his heart out laterally was moving quite well, but the heart on the septum was not, and that is because his electrocardiogram showed left bundle branch block. I will show you one more view.

Senator CARPER. I am sorry. What did it show?

Dr. FLETCHER. Left bundle branch block. Left bundle branch block is an electrocardiographic feature which is seen—I will move this over—right here, and it had gotten wider and wider and wider. And that prevented the septum from moving in the right direction. It moved towards the right heart instead of the left heart and caused the heart failure, which we can see easily on this other film. Notice that if I put the arrow on the septum, which should be moving to the right, in actual fact, if anything, it is moving over to the other side.

So this man was brought in and treated. At any time, at any point of care, we could see all of these images and make our deci-

sions. We also could see any images that he might have had anywhere else in the VA system because we have remote image view. And, indeed, we had him followed in his home, and these particular very tight values that you see were taken on a scale in his home. They were digitally transmitted to the hospital and moved into his records. So I can see his weight when he was in the hospital and when we were taking off his effusions, but I also can see every weight at home, and notice that we did not bring him back into the hospital because once he got up close to this other weight, we would increase his lasix and bring the weight down. So we have home-based care for this particular patient.

Many of our other patients, we are able to put them on a program we call My Health*e*Vet, and they have a cover sheet. Everything in the record on the thousand patients we have in the pilot site is being downloaded. Notice they have a problem list, they have progress notes that you can see as a list, and at home they can actually enter in their own weights and follow those along. They can also enter in their own blood pressures, which you can see that they follow graphically as well.

They frequently are putting in comments, like they had too much salt, when the blood pressure gets up, so they are treating themselves very nicely and taking the role of the clinician between the visits. We might see them every 3 months, but they see themselves every day and are taking these values. When they get high, we are automatically triggered at our hospital to see them so that we have a very nice patient-centered record. Everything that happens to the patient goes in one record. Anytime the patient is seen, we see what's happened at home, what's happened in the outpatient clinics, what's happened in the hospital, and can correlate those pieces of information for the best possible care for the veteran.

Senator CARPER. Good. Thank you very much. That is impressive.

Let me start off with a question of our friends from the VA. Just if you will kind of go back in time and give us some idea of the genesis of the VA's revolutionary work with respect to IT, harnessing IT in the delivery of health care. How did it start?

Dr. KUSSMAN. Thank you for the question.

Senator CARPER. What sustained it to the point that we have just seen today with Dr. Fletcher's presentation?

Dr. KUSSMAN. Yes, sir. One of the exciting things about the historical development of the VA's electronic health record is it started with the people who are in the foxhole providing the care. One of the things that we have seen and one of the resistances for the deployment of an electronic health record around the country—and I concur wholeheartedly with the Chairman's comments that he made—a lot of times physicians resist things happening to them, especially if it is pushed on them from someplace else.

Senator CARPER. It is not just physicians, too. It is nurses, it is others.

Dr. KUSSMAN. Well, society in general, perhaps. But, in truth, a lot of the case histories where the implementation of electronic health record in the civilian community have failed when the providers themselves, the doctors and nurses, particularly the doctors, have not been brought into the system right from the beginning

and felt confident that this was value-added to them and their patients.

One of the strengths for us has been that we were able to develop that from the users, and over a period of time this evolved to the point where everybody learned from everybody else. There were developments made and ultimately cascaded into what we believe is the premier electronic health record in the country.

I might ask Dr. Kolodner, who works in Information Management for us, to make a comment on that if you don't mind, sir. And tell us again your affiliation.

Mr. KOLODNER. I am the Chief Health Informatics Officer in the Veterans Health Administration, Department of Veterans' Affairs.

Senator CARPER. All right. Well, welcome.

Mr. KOLODNER. Thank you. Yes, the opportunity to work together hand in hand with our IT colleagues has been really the characteristic that allows us to have succeeded as well as we have with both the delivery of the software but, even more importantly, the acceptance of it and the growth of it over time. So we started this 20 years ago. Ten years ago, we upgraded our system to have the application that you saw here today, which we call CPRS, and that point-and-click system was one that just was very easy for our clinicians to use and to accept.

As we put it out, the doctors and nurses and psychologists and social workers around the country would work with us and provide back suggestions for how to improve it. We are currently on version 26 of this software, and it has been something that we find is extremely widespread so that, for example, 81 percent of our encounters, our patient encounters, have an electronic note within 24 hours.

Senator CARPER. Say that percentage again?

Mr. KOLODNER. Eighty-one percent within 24 hours, and we have 57 million encounters per year. So this is something that is used in all of our hospitals, clinics, and long-term care facilities, the same software. And our providers are the ones who use it and also provide suggestions on how to improve it and really have a sense of ownership as we roll it out.

Senator CARPER. In terms of lessons learned from what the VA has gone through over the last—it sounded like 20 years. I thought it was more like 10 years, but it sounds like it is longer than that. But in terms of the lessons learned within the VA for the rest of us, for the rest of us within government, I think especially about Medicare and Medicaid where costs are exploding, and we cannot pay for those already; we cannot afford those already. And the costs are getting larger. The boomers are heading toward retirement territory. So the pressure is going to be even greater financially on us.

But what are some of the lessons learned as we attempt to harness IT, health IT, and bring it to other parts of our Federal Government?

Mr. KOLODNER. There are a few things that certainly we are able to bring forth, as well as our colleagues at the Department of Defense, where they also have an extensive use of their system as well. One of the things is that it must be something where there is a partnership by the end users with the people who are pro-

viding the system or requiring the system. It also is something where the alignment of payer-provider incentives is very important. We are able to gain the benefit of the system—of having the IT system in place because we give better quality care to our veterans; we are able to see that as providers. That is very reinforcing. And we also have a savings by not having unnecessary tests or unnecessary hospitalizations.

If a provider is asked to have a system and there is no sharing of that overall savings within the system, then it does create a barrier, as the Chairman pointed out. And so we need to look at how to make sure that those incentives are there in place.

Senator CARPER. How might we do that?

Mr. KOLODNER. I think that is one of the challenges that we are wrestling with as a Nation, and certainly Secretary Leavitt and the AHIC are looking at how to provide the business case, how to provide those right incentives, and how to make sure that the barrier for entry is low enough that we, in fact, can bring the Nation along, either by a pull from the providers or by also educating the consumers so that they can provide a push and indicate to their clinicians how important it is for their clinicians to have the electronic health record since most of us don't receive all of our care from one particular provider. Even in VA, we estimate that 40 percent of the veterans we treat each year get care outside of VA. So the interoperability, whether it be with the Department of Defense where we have several hundred thousand veterans who get care each year, both at VA and DOD, or whether it is in the private sector, where we have additional hundreds—actually, millions of veterans who get care outside of VA. The interoperability is critical for us.

Dr. KUSSMAN. Sir, I might add to that that the Chairman's comment about the economic reality of—even in his group he was talking about that everybody is waiting because you want to know the standards or you do not want to invest in something that you will have to reinvest in. I am the VA's representative to the House of Delegates at the American Medical Association, and just talking to people in the private sector, a lot of that is discussed because they want to know what the value-added for them is, and they certainly do not want to make a significant economic commitment, and then find out that they have to do it again a year or two or three from now.

So one of the incentives I think would be—and this is just talking personally—trying to figure out what those standards are as soon as we can get them out and assure people that their investment will be worth it and have some sustaining value for at least a finite period of time.

Senator CARPER. Has there been an effort to take the work that you do in the VA and to be able to share it with other providers outside of the VA? I believe the answer is yes, but talk about that effort. How has it succeeded? Where has it gone well and maybe where has it not gone well?

Mr. KOLODNER. There are two types of efforts. Because our system is public domain, we actually have our code posted on the Web, and it has been downloaded and used by other entities.

Senator CARPER. By a lot of other entities?

Mr. KOLODNER. A few other entities. The issue there is support, and one other aspect of success is that this is not like installing a word processor or a spread sheet. It is a complex system. It has various standards. It needs support of a vendor or an organization to make sure that this is successful. And until recently, that was not an infrastructure that was available to support the VistA system. That is not within our mission or our funding. So, recently, there are other companies that have come forth and are supporting VistA in non-VA settings.

In addition, one other effort that is going on in the Federal Government is one that HHS has undertaken through the Centers for Medicare and Medicaid Services, CMS, and that is a project called VistA Office EHR, and they are responsible for that, so I would need to turn to HHS. I don't know whether Jodi is in a position to comment on it or whether she would want to defer.

Senator CARPER. Ms. Daniel, would you care to comment on that?

Ms. DANIEL. Sure. I cannot talk in too much detail about it. It is a CMS project, but basically the——

Senator CARPER. How would you explain what you are talking about in laymen's terms so that anybody who might be listening or watching would understand it.

Ms. DANIEL. Sure. There has been some interest in using the VistA system for physicians' offices, but there are very different types of needs in a physician's office compared to an inpatient setting. So CMS has been working toward modifying the VA system in order to make it useful for a physician's office.

They are currently doing a demonstration right now. It is in beta testing. They are trying to see if this is something that is workable, if it is something that is useful in a physician's office, and they are still in the testing phase right now. We are planning to work with CMS to see what kind of results they find through that process.

One of the significant issues that we see, though, is that there is an expense of the technology, but there is also needs to have training and ongoing support for use of an electronic health record system, which also can be a challenge in a small physician's office. So while this may be one possible approach that can help with adoption, there are many other possible approaches, and there are some challenges that still lie ahead.

Senator CARPER. All right. Thank you.

I think I would like to go to our friends from the Department of Defense, and talk to us, if you will, about the effort to sort of better interface between DOD active duty and the VA and how those efforts have gone. If you could just talk about that a bit, I would appreciate it.

Mr. HENDRICKS. Yes, sir. We have worked a number of years with the VA and sharing data between the two Departments. The approach that was taken was to basically break down the type of data that the providers are going to need. One of the critical decisions that was made early was to separate it into what is necessary from a viewable standpoint, what data do you simply need to see, versus what data needs to be computable.

The Bidirectional Health Information Exchange (BHIE) is a huge breakthrough for both Departments, which allows a provider, when a retiree who is disabled and is getting care from the VA goes to

either the DOD or the VA site where they have BHIE, that provider can pull up the records from the other Department and actually view it. When the patient leaves, the data goes away, so, therefore, you do not have the security challenges with that. So making viewable data has been worked, allowing us to expand many types of data sets.

But there is also computable data that is necessary. Computable data and sharing that is significantly more difficult in that you have to map the data elements from both systems such that the computer can understand the terms and the data elements that are coming across. And that is the work that we are doing in El Paso, Texas, as we speak.

What this allows is for medications and for allergies, so instead of having the provider understand that I may be allergic to Tylenol and if they are giving me codeine, to understand that that particular codeine has Tylenol as a carrier with it, the computer automatically knows because the data is computable and can give the alert to the provider.

The computer also know that there are secondary allergies, and during the computable data match, it mirrors both systems.

So, again, I think the biggest success we have achieved is by looking at the types of data that we are looking to exchange and what is necessary as a part of that exchange.

Senator CARPER. Thank you.

Some of us in the Senate are contemplating introducing legislation this summer that would require insurance companies that cover Federal employees or families or dependents or Federal retirees to require within a period of a year or so for those health insurance companies to provide electronic health records for Federal employees or Federal retirees and our family members.

Would any of you care to comment on the wisdom of that? Good idea? Bad idea? Well-intended but maybe flawed? Or if you have some advice as to how we might go about and how we might craft the legislation, I would appreciate that. Anybody at all.

Dr. KUSSMAN. I guess no one else is volunteering, so, sir, I think that from the VA's perspective, we are looking at aggressively, as we buy health care in the community, and looking at our contracts and looking at how we do that, to try to be sure, as much as possible, and try to write this into the potential future contracts, that whoever we buy the care from would have the ability to accept and transfer electronic information.

The challenge, the obvious one, is that does not exist in many places around the country. So when you are trying to get care, how do you do that? And so I think it is a challenge that really goes back to the original thing. How do we encourage the health care community around the country to want to become part of an electronic record to better the care for our patients as well as the interoperability and transfer of information.

Senator CARPER. Let me hear from some others. Mr. Hendricks.

Mr. HENDRICKS. Yes, sir. In writing contracts for electronic health records, I think one of the challenges we are going to run into will be how do you write the contract. Do you write the contract such that you keep them current with each standard? Which is the released number of standards could be difficult to have the

audit trail to ensure that they are in compliance with that? The work of the Office of the National Coordinator and the American Health Information Community, I think, is taking this a long way down a path that could make that a little easier. They have established a certification process for electronic health records by requiring those contracts to state that you must be compliant with the certification process. I think it would make it far easier for us to then audit the contracts in place.

So, I would simply suggest as long as the language doesn't focus on standards per se and focuses on certification, it would make it a lot easier for implementation.

Senator CARPER. Thank you. Ms. Daniel.

Ms. DANIEL. Yes, there are two points I wanted to make with regard to this.

First, we recently had, as I had mentioned, recommendations made by the American Health Information Community, and one of those recommendations was to try to consider ways to incorporate standards and certification into our contracts, as some other folks had mentioned. So we are thinking now about how we can include those kinds of processes and standards in the contracts that we currently have, and we have a Health IT Policy Council that has represented us from DOD, VA, and OPM, as well as other Federal agencies, that are sitting around the table together to try to figure out how to address that type of issue as well as other issues related to health IT.

The one point that I would like to note and that I would want to caution is that using health plans may not be the best approach because claims data may not be complete and is often delayed. It is not real-time data like clinical data would be.

So there are some concerns about claims data as opposed to clinical care data that are important to consider, and also focusing on the health plans rather than the clinicians has some consequences to it.

So I just wanted to raise that point as you are thinking about that legislation

Senator CARPER. OK, good. If we are interested in some further guidance, could we come back to you?

Ms. DANIEL. Absolutely.

Senator CARPER. All right. Good. You are a Federal employee, aren't you?

Ms. DANIEL. Yes.

Senator CARPER. Any input and guidance you could give us, we would be grateful.

Ms. Koontz, could I direct the next question to you? I may have mentioned in my opening statement, I believe, that the health care providers outside of the VA and the DOD can learn some valuable lessons from these two Departments about how to best implement and use health information technology. Do you also believe that there are some lessons that can be learned from these Departments? And if so, do you want to share those with us?

Ms. KOONTZ. I do. In fact, GAO has previously reported on a number of lessons that were learned from the VA/DOD interoperability experience that we thought might be applicable to the larger effort to develop national health information records. And among

the lessons learned that we mentioned are many of the ones that Dr. Kolodner already previously went over, and I would be happy to submit the whole list for the record.

Some of the ones, though, that we specifically talked about was the interaction with stakeholders and the need to bring those together in order to develop the initiative.

Senator CARPER. Is that something that needs to be done early on?

Ms. KOONTZ. Absolutely. As early as day one. And, also, I think we also emphasize the importance of——

Senator CARPER. Whenever I am trying to get somebody to go along with me if I have an idea, I try to first convince them it was their idea. [Laughter.]

And that they are convincing me to go along with their idea.

Ms. KOONTZ. I do not know if our lessons learned went that far.

Senator CARPER. I understand.

Ms. KOONTZ. I think the other thing that we mentioned, too, as well as many others, was the importance of adopting common standards, terminology, and performance measures, in developing the health IT records.

Senator CARPER. Talk to us just as a follow-up to that about the development of the standards. Legislation has actually been introduced in the Senate, I think last year, offered by Senator Frist, Senator Enzi, Senator Clinton, maybe all of the above, and that legislation has passed the Senate, I think unanimously and is over in the House. I do not know that the House has focused much on it.

Ms. Daniel, is that something you are familiar with? I see you nodding your head.

Ms. DANIEL. Yes, I am.

Senator CARPER. Could you talk to us a little bit about what the Senate has done and what the House might be contemplating?

Ms. DANIEL. As you had mentioned, the Senate has passed a health IT bill last fall. I believe that the House has a bill that has passed out of committee, out of both Ways and Means and Energy and Commerce.

Senator CARPER. How do the two approaches compare and contrast? Can you help me with that? And if somebody else who might be sitting in the row behind any of you would like to share their insight, you are welcome to step to the table, and we will hear from you as well. Anybody who has special insights?

Back to you, Ms. Daniel. If you are able to compare and contrast the legislation, the two approaches, that would be fine.

Ms. DANIEL. I am not really prepared to do that today. I apologize.

Senator CARPER. If you could just do that for the record, that would be fine. That is all right. I do not expect you to know everything.

One of the things that has been mentioned is training. I was in a health care setting the other day—actually, last week, and the folks that were taking me through said—it was actually a nursing home, one that had some people in reasonably good health and some people in very bad health. And they said about half the peo-

ple who come there to live go home and about half who come there to live, live there for the rest of their lives.

They indicated to me that it was difficult to get their staff to accept and to literally be trained on using the systems that had been introduced, and they actually talked about the reluctance of, in this case, some of the nursing staff not wanting to type information into the system.

I suggested to them to maybe consider asking Delaware Technical Community College to consider offering training programs for folks in all kinds of health settings to use systems of this nature if the in-house training was not good enough.

When I was governor, we tried to harness the technology and put it in our schools, a lot of computers in our classrooms. We sought to get our teachers to use them and try to relate our academic standards to the technology and to use the Internet and so forth to bring the learning into the classroom. We found that there is a lot of reluctance. We had a better ratio of computers to students than any State in America. We had a reluctance on the part of the teachers to use the stuff, except for the new teachers, the ones recently out of college who were familiar with the technology, comfortable with the technology.

Eventually what happened was we contracted with the Delaware Technical Community College, and they started training some of the veteran teachers, and we had the younger teachers who came out of colleges and began teaching, and they sort of trained the veterans. And between the two, we finally got to the point where we are doing a much better job of harnessing technology to promote learning in the classrooms.

But just in terms of training doctors and nurses—not just registered nurses but LPNs and others—to use these systems, what seems to be working and maybe what does not work?

Mr. KOLODNER. What we have found over the years is that you really had to have a tremendous amount of help, what we call "help at the elbow," help right there early on. Simply putting in the technology, doing a quick class, and then walking away does not help people to change that practice and to get comfortable with the system.

So what we end up doing is having people deployed throughout the facility, whether that is inpatient or outpatient settings, to be there, especially early on when the system first goes up, to answer any questions, to go around and check with the users to see what are those little things that they have not gotten comfortable with yet or that they have not figured out how to work with very smoothly, and for what we call our clinical application coordinators to be there and help them through that.

We also use a process of having clinical champions. Dr. Fletcher was one when this first came out and he was Chief of Cardiology. And they are the advocates. It is not pushed in from the outside. It is actually drawn in from the inside, and you find those early adopters, have them make sure that the system really does work, work out whatever little barriers there might be, get those smoothed out, and then——

Senator CARPER. Sort of a kind of bottoms-up approach that the Chairman was talking about?

Mr. KOLODNER. Absolutely. And once it reaches a certain level, like 40 or 50 percent of the users, at that point the top-down management saying this is the target that can drive it to completion. But doing that too early actually gets resistance, and doing it too late wastes the opportunity to have it used widely.

Senator CARPER. Good. Thank you. Dr. Kussman.

Dr. KUSSMAN. Sir, on top of that, you had mentioned there are cultural and age differences. The new group of interns and residents that Dr. Fletcher mentioned, they take to this very easily. They have grown up with computers. They feel comfortable with it. Some of us are little dinosaurs, and when we went through the process, it took a little longer to adapt to it because early on—for me anyway, I do not type too well or too fast, I use two fingers. When I was going to write a prescription for somebody, it took me a minute or two to go through the steps of writing it. I could write a prescription in 15 seconds. And so I had to learn, but the value-added, as I got better with it and became inculturized with it is really learning and feeling comfortable with it. And that is the process that Dr. Kolodner was mentioning.

But most people, when they get comfortable, realize that it is a quantum leap improvement in the delivery of care.

Senator CARPER. I would think if I were a provider, maybe a doctor or maybe a nurse or an LPN or someone who is even less senior than that, but if this was a skill that I learned—in some of these settings, especially nursing homes—there is huge turnover. But my sense was that if I was someone working in one of those places, if I could learn these skills, learn these systems, I just think it would make me more marketable, more employable, and hopefully to earn more money. Is that the case?

Mr. KOLODNER. It is, but even more importantly, what we find is that the people who have that skill then either choose to stay at that facility because it has the capabilities and they know that they are able to give better care.

Or they look for facilities that have that, so that it becomes a driver in the system as well. The first time that we have a nurse who does not give a medicine because the barcode medication administration system stopped him or her from giving medicine, they become a believer in the system.

Senator CARPER. Yes. I have been to hospitals, VA hospitals, where they are actually using that barcode, and it is pretty impressive to see how that works.

Ms. Daniel, I have a question for you and then maybe a couple more, and then we will perhaps wrap it up. I understand that the Office of the National Coordinator has experienced some pretty big changes this year, not just with the departure of Dr. Brailer, but with the addition of four new intra-offices. I do not know much about this, but can you just give us some further details on the reasoning behind the expansion in the roles of these new offices?

Ms. DANIEL. Sure, I would be happy to.

Senator CARPER. What are they?

Ms. DANIEL. There are four new offices and an immediate Office of the National Coordinator. The four offices are the Office of Health Information Technology Adoption, the Office of Interoperability and Standards—so those are sort of the two goals that I had

mentioned that we are working towards—and then the Office of Policy and Research, which is the office that I had up; and the Office of Programs and Coordination.

The reason that these new offices were formed is that originally it was sort of just a very small group of folks when the office was first founded that were trying to pull all this together. And just last summer, there was a formalization of the office. The Secretary's office had played a role in figuring out what the best approach was for formalizing the office and setting up the different structures so that we can be responsive in a variety of different areas and different approaches.

So we have the National Coordinator, a Deputy, Directors of those four offices that I mentioned, and then staff below all of those four Directors.

As you mentioned, we have recently, sadly, lost Dr. Brailer. He resigned last month. I believe that from what I hear, the Department is currently looking for a new candidate to fill his role, and I do not have any information about where that stands at this point.

Senator CARPER. All right. Good.

A question, if I could, maybe for Mr. Hendricks, please. Mr. Hendricks, in Delaware, we raise a lot of chickens. In fact, in Delaware, there are 300 chickens for every person who lives in our State. So for anybody in the audience who is eating chicken these days, God bless you. Keep it up.

We have a concern in Delaware about avian flu because what happens when there are scares of avian influenza, an avian flu pandemic around the country or around the world, people stop eating chicken and it hits the bottom line, hits us in the pocketbook on the Delmarva Peninsula. So it is something that gets our attention.

There is concern about avian influenza on the Delmarva Peninsula and throughout this country, and I think around the world. And it is not just avian flu but other potential outbreaks of this nature, but we are just focused on this kind of pandemic, future potential pandemic right now. But being able to identify outbreaks early seems to be the key to properly responding and helping to control their spreads.

I was just wondering, what does AHLTA stand for?

Mr. HENDRICKS. AHLTA is the Armed Forces Health Longitudinal Technology Application.

Senator CARPER. Of course. Thank you.

Any way that AHLTA can help our Nation deal with these kinds of potential risks?

Mr. HENDRICKS. Yes, sir. If you look at the structure of AHLTA, you are going to find that it is somewhat different than that structure of the VA's system and that AHLTA is built far more utilizing structured date. And we utilize that simply because of the mission of the Department of Defense. We have some other challenges that we have to be cautious of, and that is chemical and biological agents that we want to be aware of. And to do that, we use structured data for signs and symptoms of patient encounters. And many systems today across the Nation will go off with a diagnosis, and then you will do surveillance based off those diagnoses.

Well, to get to a diagnosis, it may take a week to 2 weeks to get to the diagnosis. By looking at signs and symptoms, you perhaps in avian influenza could catch that by simply looking at flu-like symptoms and following the temperature. And Dr. Kussman will probably have to help me out here. I suspect the avian influenza is more noted by a rapid increase in temperature of the patients.

So by looking at the signs and symptoms of the AHLTA database, which happens to be in 70 hospitals and will be in over 400 medical clinics around the world, if you look at the signs and symptoms and trends of a geographical nature, perhaps you can see outbreaks that would warrant further investigation to see if perhaps the Nation is seeing something that could be an avian influenza.

Senator CARPER. Thank you. Dr. Kussman, do you want to add to that?

Dr. KUSSMAN. Yes, sir. As we speak, actually, with DOD we are, as I mentioned in my prepared remarks, in 1,400 sites around the country. We are partnering with CDC and other organizations to be the sort of canary in the mine. We are constantly monitoring reporting already, clusters of symptoms that automatically are reported to the CDC so they can monitor that if it was in Delaware or Texas, or wherever it was, if there was an outbreak of something we can then react early. It does not necessarily mean that we need to know the diagnosis, as Mr. Hendricks mentioned, but, rather, that there is an outbreak of something. And then the epidemiologists and the other clinicians can make the diagnosis.

So this is very important to us, not only with avian flu, but all kinds of other potential outbreaks of things, whether it is biological, chemical, or whatever it would be.

Senator CARPER. All right. Thanks.

A vote has begun, and I have asked Meredith Pumphrey, who is sitting right behind me, to let me know when there is 5 minutes remaining. We usually have 15 minutes to get there to vote, and when the clock ticks down to 5 minutes, we are going to probably adjourn.

Before we do that, Mr. Howard, could I ask a question of you?

Mr. HOWARD. Yes, sir.

Senator CARPER. As you know, it is estimated that over 40 percent of our veterans seek health care services—I think that was mentioned earlier—outside of VA medical facilities. Do you know, does the VA have any plans to exchange electronic health records with health care providers outside of the VA network? Have you heard any talk of that?

Mr. HOWARD. Well, Dr. Kussman knows more about that than I do, sir, but I believe we already do. We have research going on where some of that takes place, and we also have private sector support involved in some of the diagnoses and what have you. But I will let Dr. Kussman answer that.

Senator CARPER. Thank you.

Dr. KUSSMAN. Yes, sir, as we and Dr. Kolodner mentioned, particularly with DOD, for instance, not all veterans are retirees, but all retirees are veterans, and so we have a sub-segment of our population that can go back and forth from DOD to the VA. And so now we are able to make sure that data works because someone like those of us who are retired here in Washington can go to Wal-

ter Reed or Bethesda and the Washington VA, and it is very important for that information to be easily accessible.

As we mentioned, we are trying to work with the civilian community and HHS to maximize our capability, but as you alluded to and the Chairman alluded to, the use of the electronic health record in the civilian community has been less than we would like to see. And as that expands, more and more capability would be able to be achieved.

Senator CARPER. I want to ask one last question of each of you. As I said earlier in my comments, we are spending a ton of money in this country for health care, much more, I am told, on a per capita basis than anybody else in the world. The results are not necessarily the best in the world, at least by a number of measures. No silver bullets, but one of the ways—it seems we work in the VA and DOD and other civilian installations where we have begun to harness health IT. We are starting to see some results in terms of holding down costs, saving lives, providing better care, and also seemingly to provide greater job satisfaction for some of the folks who are using the technology.

We serve here in the Senate—a couple of us are doctors, most of us are not, but we all care about trying to save lives and care about improving our health care for the rest of us and care about saving money because we do not have it in great abundance these days. But as we, as legislators, attempt to find the appropriate role for us and help get our country on the right track, what closing words of advice would each of you have for us in the Senate, and particularly on this Subcommittee? Ms. Daniel.

Ms. DANIEL. Thank you, Senator. From our standpoint, we have been working under our existing authorities that we have in order to do all of the work that we are doing, the collaborative processes that we have in place to work towards standards, developing certification, getting public-private collaboration through our American Health Information Community, looking at the Stark and kickback regulations or other areas where we can make changes in order to help encourage adoption and encourage interoperability.

So we are working under our existing authorities, and we believe we have the authorities that we need in order to pursue the work that we are doing. We have been working very close, as I said, with our Federal partners, and I think those collaborative efforts are really working and I think are going to show some really strong results in the near future.

So the one piece of advice I would say, if you are considering legislation, is to assure that legislation does not impede the current good work that we are doing and does not cause us to take steps backward in the work that we are doing but lets us continue to progress.

Senator CARPER. Good. Well, we just need to have a good dialogue with you, and we look forward to that.

Ms. Koontz, please.

Ms. KOONTZ. I will just comment that I think what DOD and VA are doing in terms of trying to achieve a virtual medical record is a very important initiative, and GAO has made a number of recommendations, I think, which have improved what they are doing.

Senator CARPER. And I understand they have been accepting of those recommendations.

Ms. KOONTZ. Generally so. We have some still outstanding, and we are working with them on that. And I would just only encourage the Congress to continue their oversight over these issues.

Senator CARPER. All right. Thank you. Mr. Hendricks.

Mr. HENDRICKS. Yes, sir, just a short comment, just a suggestion. It is very easy to jump to the return on investment and expect immediate savings on implementation of any electronic health system. And I would just caution that I think that for the Nation, electronic health records savings will come more in the long term. The electronic health record will allow us to do such things as disease management, to give better control on the diabetes and the asthma, and these are things that we will not see an immediate return. Those will be years out.

Senator CARPER. That is a good point. Thank you. Mr. Howard.

Mr. HOWARD. Sir, I only have one suggestion, and for obvious reasons, due to our most recent incident regarding data security. And it is very easy to exchange information, in the digital age, lots of it. So I would say, in whatever legislation is proposed, we get into the exchange of data among DOD, VA, other government agencies, and I really think that needs to be continually highlighted. I think the VA has pretty good controls over all that in the health area, but we have seen how easy it is to fall into the trap of passing information around without proper security.

Senator CARPER. OK. Thank you, sir. Timely and well spoken. Dr. Kussman.

Dr. KUSSMAN. Sir, I think we would like, as mentioned, to work with you as you develop the legislation to potentially add whatever experience we have to that. I think it is a mix of a carrot and a stick to get people to do things that they may not feel comfortable with. And I think that as Mr. Hendricks mentioned, a lot of it is concern about sunk costs with the benefit later on, and I think that has to be addressed. If it is not, there will be continued resistance to spending money without an obvious payback for that.

Senator CARPER. All right. Thank you. The last word.

Mr. KOLODNER. I think it is important to recognize that where we are today is very different than 5 years ago. There really is progress, there really is momentum. It is important to reinforce that and not have a force that comes in, as Jodi Daniel mentioned, that is in conflict or competition.

I think in that sense, what Congress can do is to look to make sure that the environment and the parameters are right for this to move forward. And you might think in terms of the Internet. Nobody mandated the Internet as a solution. In fact, if they had come in with solutions, they would have gotten in the way. But to create the right environment, the right reinforcements, and the right incentives, and to then do that in alignment with the other activities.

Senator CARPER. Good. Well, this has been a terrific hearing. I am delighted I was here. And I am delighted that you were here. I want to express my thanks to Meredith Pumphrey, who is sitting right behind me, to the Chairman for his willingness to have a hearing on this subject, and to the members of his staff for helping to plan it and to get all of you to come.

We would ask that you be willing to respond to some further questions in writing, and we look forward to collaborating with you as we go forward.

On behalf of all of us on this Subcommittee and our full Committee, and, frankly, I think probably on behalf of all of us in the Senate, thank you for the good work that you are doing, especially for those of you that are serving our veterans and our military personnel and those who are trying to help us take those lessons and extend them to the rest of our civilian population. You are doing the Lord's work. It is important work, and we are grateful.

Thank you, and with that, the Subcommittee stands adjourned.

[Whereupon, at 4 p.m., the Subcommittee was adjourned.]

APPENDIX

Testimony
Before the Senate Committee on Homeland Security and Government Affairs Subcommittee on Federal Financial Management, Government Information and Information Security

Accelerating the Adoption of Health Information Technology

Statement of

Jodi G. Daniel, J.D., M.P.H.

Director, Policy and Research
Office of the National Coordinator for Health IT
U.S. Department of Health and Human Services

For Release on Delivery
Expected at 2:30 p.m.
Thursday, June 22, 2006

Chairman Coburn and Members of the Subcommittee, I am Jodi Daniel, Director of Policy and Research for the Office of the National Coordinator for Health Information Technology (ONC). Thank you for inviting me to testify today on some of the health information technology activities underway in the Department of Health and Human Services.

Setting the Context

On April 27, 2004, the President signed Executive Order 13335 announcing his commitment to the promotion of health information technology (IT) to improve efficiency, reduce medical errors, improve quality of care, and provide better information for patients and physicians. In particular, the President called for widespread adoption of electronic health records (EHRs) within 10 years so that health information will follow patients throughout their care in a seamless and secure manner. Reaching this ambitious goal requires cooperation among Federal agencies and Departments that play a role in advancing our understanding and use of health information technology: coordination across all Federal HIT programs; and coordination with the private sector. Toward those ends, the Secretary of Health and Human Services established within his office the position of National Coordinator for Health Information Technology on May 6, 2004 to advance the President's vision.

As my testimony will demonstrate, this approach is working. The Office of the National Coordinator works closely with the Centers for Medicare and Medicaid Services (CMS),

the Department of Defense, the Department of Veterans Affairs, the Office of Personnel Management (OPM), and multiple other agencies and departments to ensure synergy in our efforts and avoid unnecessary duplication.

On July 21, 2004, the Department published the "Strategic Framework: The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care." The Framework outlined an approach toward nationwide implementation of interoperable EHRs and identified four major goals. These goals are: 1) inform clinical practice by accelerating the use of EHRs, 2) interconnect clinicians so that they can exchange health information using advanced and secure electronic communication, 3) personalize care with consumer-based health records and better information for consumers, and 4) improve public health through advanced bio-surveillance methods and streamlined collection of data for quality measurement and research. Since that time, the Department had been further developing health IT objectives and strategies while focusing on these goals and the clinical business, and technical foundations.

The Clinical Foundation: Evidence of the Benefits of Health IT

We believe that health IT can save lives, improve care, and improve efficiency in our health system. Five years ago, the Institute of Medicine (IOM) estimated that as many as 44,000 to 98,000 deaths occur each year as the result of medical errors. Health IT, through applications such as computerized provider order entry can help reduce medical errors and improve quality. For example, studies have shown that adverse drug events

have been reduced by as much as 70 to 80% by targeted programs, with a significant portion of the improvement stemming from the use of health IT.

Every primary care physician knows what a recent study in the Journal of the American Medical Association (JAMA) showed: that clinical information is frequently missing at the point of care, and that this missing information can be harmful to patients. That study also showed that clinical information was less likely to be missing in practices that had full electronic records systems. Patients know this too and are taking matters into their own hands. A recent survey by AHRQ with the Kaiser Family Foundation and the Harvard School of Public Health found that nearly 1 in 3 people say that they or a family member have created their own set of medical records to ensure that their health care providers have all of their medical information.

Current analyses examining whether health IT will produce cost savings show mixed results. Models projecting the potential savings from health IT vary widely. These estimates are based in part on the reduction of obvious errors. For example, on average, a medical error is estimated to cost about $3,700 in 2003 dollars. But, these savings are not guaranteed through the simple acquisition of health IT. If poorly designed or implemented, health IT will not bring these benefits, and in some cases may even result in new medical errors and potential costs.

Business Foundation: The Health IT Leadership Panel Report

Recognizing that the healthcare sector lags behind most other industries in its investment in IT, HHS employed a contractor, the Lewin Group, to convene a Health IT Leadership Panel to help understand how IT has transformed other industries and how, based upon their experiences, it can transform the health care industry.

The Leadership Panel was comprised of nine CEOs from leading companies that do not operate health care businesses, but purchase large quantities of healthcare services for their employees and dependents.. They were called upon to evaluate the need for investment in health information technology and the major roles that both the government and the private sector can play in achieving widespread adoption and implementation. The Leadership Panel identified as a key imperative that the Federal government should act as leader, catalyst, and convener of the nation's health information technology effort. Private sector purchasers and health care organizations can and should collaborate alongside the federal government to drive adoption of health IT. In addition, the Leadership Panel members recognized that widespread health IT adoption may not succeed without buy-in from the public as health care consumer.

The Technical Foundation: Public Input Solicited on Nationwide Network

HHS published a Request for Information (RFI) in November 2004 that solicited public input about whether and how a Nationwide Health Information Network (NHIN) could be developed. This RFI asked key questions to guide our understanding around the

organization and business framework, legal and regulatory issues, management and operational considerations, standards and policies for interoperability, and other considerations.

Over 500 responses to the RFI were received. These responses yielded rich insights on how a National Health Information Network based on interoperability of health information exchange could be developed to realize our goal of the safety, quality and efficiency of care. Clear themes that emerged from this wide group of stakeholders include:

- A NHIN should be a decentralized architecture built using the Internet, linked by uniform communications and a software framework of open standards and policies.
- A NHIN should reflect the interests of all stakeholders with a governance entity composed of public and private stakeholders to oversee the determination of standards and policies.
- A key challenge will be the provision of sufficient safeguards to protect the privacy of personal health information. Others include the need for additional and better refined standards; accurately verifying patients' identity; and addressing discordant inter- and intra-state laws regarding health information exchange.
- Incentives may be needed to accelerate the deployment and adoption of a NHIN.
- Existing technologies, federal leadership, and certification of EHRs will be the critical enablers of a NHIN.

Departmental Action

Two critical challenges to realizing the President's vision for health IT are now being addressed: a) interoperability and electronic portability of health information using information technology and b) electronic health record adoption. Further, the gap in EHR adoption between large hospitals and small hospitals, between large and small physician practices, and among other healthcare providers must also be addressed. This adoption gap has the potential to shift the market in favor of large players who can afford these technologies, and can create differential health treatments and quality, resulting in a quality gap.

These challenges are being met by key actions currently underway in the ONC: harmonizing health information technology standards; promoting the certification of health IT products to assure consistency with standards; addressing variations in privacy and security policies that can pose challenges to interoperability; and developing a prototype, nationwide, Internet-based architecture for sharing of electronic health information. These efforts are inter-related, and Secretary Leavitt's federal advisory committee, the American Health Information Community, is charged with making recommendations regarding the federal government's role in responding to these challenges.

American Health Information Community

On July 14, 2005, Secretary Leavitt announced the formation of the American Health Information Community (the Community), a national public-private collaboration formed pursuant to the Federal Advisory Committee Act. The Community has been formed to facilitate the transition to interoperable electronic health systems in a smooth, market-led way. The Community is providing input and recommendations to the Secretary on use of common standards and how interoperability among Health IT systems can be achieved while assuring that the privacy and security of those records are protected. On September 13, 2005, Secretary Mike Leavitt named the Community's 17 members, including nine members from the public sector and eight members from the private sector.

At its November 29, 2005 meeting, the Community formed workgroups that were charged to make recommendations for specific achievable near-term results in the following areas:

- Consumer Empowerment - Make available a consumer-directed and secure electronic record of health care registration information and a medication history for patients.
- Chronic Care - Allow the widespread use of secure messaging, as appropriate, as a means of communication between doctors and patients about care delivery.
- Electronic Health Records - Create an electronic health record that includes laboratory results and interpretations, that is standardized, widely available and secure.

- Biosurveillance - Enable the transfer of standardized and anonymized health data from the point of health care delivery to authorized public health agencies within 24 hours of its collection.

These workgroups advanced, and the Community accepted, recommendations on May 16, and key actions related to these and future recommendations are beginning to unfold.

Health Information Technology Contracts

In addition to the formation of the Community, HHS through ONC has issued contracts, the outputs of which will serve as inputs for the Community's consideration. Specifically, these contracts focus on the following major areas:

Standards Harmonization. HHS awarded a contract to the American National Standards Institute, a non-profit organization that administers and coordinates the U.S. voluntary standardization activities, to convene the Health Information Technology Standards Panel (HITSP). The HITSP brings together U.S. standards development organizations and other stakeholders. The HITSP is developing and implementing a harmonization process for achieving a widely accepted and useful set of health IT standards that will support interoperability among health care software applications, particularly EHRs.

Today, the standards-setting process is fragmented and lacks coordination and specificity, resulting in overlapping standards and gaps in standards that need to be filled. A process was implemented where standards are identified and developed specific to real-world

scenarios, or "use cases." As of March 2006, we have three common use cases for the standards harmonization process, which will also be used in the other contracts discussed below. In May 2006, the HITSP proposed "named standards" for the three use cases and is now developing interoperability specifications for each.

Compliance Certification. HHS awarded a contract to the Certification Commission for Health Information Technology (CCHIT) to develop criteria and evaluation processes for certifying EHRs and the infrastructure or network components through which they interoperate. CCHIT is a private, non-profit organization established to develop an efficient, credible, and sustainable mechanism for certifying commercial health care information technology products. The contract, currently scheduled for a three-year period, will address three areas of certification: ambulatory electronic health records, inpatient electronic health records, and the infrastructure components through which they could interoperate.

The CCHIT has made significant progress toward the certification of commercial ambulatory electronic health records. In February 2006, CCHIT began using its final criteria to conduct ambulatory electronic health record certification pilot tests and has been accepting applications for operational certification as of March 2006, with the goal of having certified electronic health record products in the marketplace on July 18, 2006. Certification will help buyers of HIT determine whether products meet minimum requirements.

NHIN Architecture. HHS has awarded contracts totaling $18.6 million to four consortia of health care and health information technology organizations to develop prototype architectures for the Nationwide Health Information Network (NHIN). The four consortia will move the nation toward the President's goal of personal electronic health records by creating a usable architecture for health care information. The NHIN architecture will be coordinated with the work of the Federal Health Architecture and other interrelated infrastructure projects. The goal is to develop real solutions for nationwide health information exchange by stimulating the market through a collaborative process and the development of network functions. In June 2006, the contractors submitted proposed functional requirements for the NHIN's to HHS and a public meeting will be held next week to review them.

Security and Privacy. HHS awarded a contract to RTI International working with the National Governors Association Center for Best Practices to form the Health Information Security and Privacy Collaboration (HISPC). Through this contract, healthcare stakeholders, including consumers, within and across 34 states and territories will assess variations in organization-level business policies and State laws that affect electronic health information exchange; identify and propose practical solutions for addressing such variation that will comply with privacy and security requirements in applicable Federal and State laws; and develop detailed plans to implement identified solutions.

All State and territory governors were invited to submit, or have a designee submit, a proposal for participation. States and territories that participate in the HISPC will be required to undertake certain activities that include: examining privacy and security policies and business practices regarding electronic health information exchange; convening and working closely with a wide range of stakeholders in the State, including consumers, to identify best practices, barriers and solutions; and developing an implementation plan for solutions to address organization-level business practices and State laws that affect privacy and security practices for interoperable health information exchange.

In the next six months, state consortia will produce an interim assessment of current privacy and security variations. To do this, state subcontractors will form collaborative workgroups to define this preliminary landscape. State solutions and implementation plans under this contract will be finalized in early 2007.

EHR Adoption Study

To assess progress toward the President's goal for EHR adoption, we must be able to measure the rate of adoption across relevant care settings. To date, several health care surveys have queried health care providers such as individual physicians, physician group practices, community health centers, and hospitals on their use of EHRs in an effort to estimate an overall "EHR adoption rate." These surveys indicate an adoption gap; however, the surveys and what they have measured have varied. These variations occur

from survey factors such as the type of entity, geography, provider size, type of health information technology deployed, how an EHR is defined, the survey sampling frame methodology (e.g., the source list of physicians), and survey data collection method (i.e., phone interview, mail questionnaire, internet questionnaire, etc.).

Due to the variations in the purpose and approach, these surveys have yielded varying methods of EHR adoption measurement. In particular, no single approach yields a reliable and robust long-term indicator of the adoption of interoperable EHRs that could be used for (1) bench marking progress towards meeting the President's EHR goal and (2) informing Federal policy decisions that would catalyze progress towards reaching this goal. Therefore, HHS awarded a contract to the George Washington University and Massachusetts General Hospital Harvard Institute for Health Policy to support the Health IT Adoption Initiative. The new initiative is aimed at better characterizing and measuring the state of EHR adoption and determining the effectiveness of policies to accelerate adoption of EHRs and interoperability.

Federal Health Architecture

Now that HHS has established an infrastructure to address standards harmonization, compliance certification, nationwide health information network architecture, security and privacy, and EHR adoption measurement through its contracts, there is a need to gain the Federal perspective in these and other Federal health information technology areas. To accomplish this, we are looking to the Federal Health Architecture (FHA), an OMB

line of business, established on March 22, 2004 and managed by ONC to create interoperability and increase efficiency within the public sector. To better meet the President's health IT goals, FHA as of March 2006 has been realigned to provide the federal perspective using the processes created within ONC to ensure that interoperability exists within and between the public and private sector. FHA will achieve this refined vision by providing input into the established infrastructure and guidance for implementation within the public sector. Moving forward, FHA will be representing and coordinating the federal activities in all matters relating to the President's health IT plan.

Stark and Anti-Kickback

Regulations that support adoption of e-prescribing and electronic health records were proposed last October. CMS proposed to created exceptions to the "physician self-referral" law to allow hospitals and certain health care organizations to furnish hardware, software, and related training services to physicians for e-prescribing and electronic health records, particularly when the support involves systems that are "interoperable" and thus can exchange information effectively and securely among health care providers. In a parallel action, the OIG announced proposed safe harbors for arrangements involving the donation of technology for e-prescribing and electronic health records. Arrangements for the provision of items and services that meet the requirements of the safe harbors would be exempt from enforcement action under the Federal anti-kickback statute.

Interoperable HIT as a Foundation for other Initiatives

The Department recognizes that interoperable health IT is critical in not only transforming how care may be delivered, but also in informing patients and other consumers about costs of care, and some aspects of its quality. Innovative incentive programs such as value-based purchasing could benefit from high fidelity reliable, information being available.

Conclusion

Thank you for the opportunity to update you on the progress we are making in the area of health information technology. HHS, under Secretary Leavitt's leadership, is giving the highest priority to fulfilling the President's commitment to promote widespread adoption of interoperable electronic health records, and it is a privilege to be a part of this transformation.

This concludes my prepared statement. I would be pleased to answer any questions.

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on Federal Financial Management, Government Information, and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

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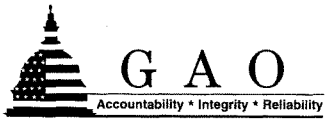
INFORMATION TECHNOLOGY

VA and DOD Face Challenges in Completing Key Efforts

Statement of Linda D. Koontz, Director
Information Management Issues



GAO-06-905T

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Highlights

Highlights of GAO-06-905T, a testimony before the Subcommittee on Federal Financial Management, Government Information, and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

The Department of Veterans Affairs (VA) is engaged in an ongoing effort to share electronic medical information with the Department of Defense (DOD), which is important in helping to ensure high-quality health care for active duty military personnel and veterans. Also important, in the face of current military responses to national and foreign crises, is ensuring effective and efficient delivery of veterans' benefits, which is the focus of VA's development of the Veterans Service Network (VETSNET), a modernized system to support benefits payment processes.

GAO is testifying on (1) VA's efforts to exchange medical information with DOD, including both near-term initiatives involving existing systems and the longer term program to exchange data between the departments' new health information systems, and (2) VA's ongoing project to develop VETSNET.

To develop this testimony, GAO relied on its previous work and followed up on agency actions to respond to GAO recommendations.

What GAO Recommends

GAO has previously made numerous recommendations on these topics, including that VA and DOD develop an integrated project plan to guide their efforts to share patient health data, and that VA develop an integrated project plan for VETSNET.

www.gao.gov/cgi-bin/getrpt?GAO-06-905T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Linda Koontz at (202) 512-6240 or koontzl@gao.gov.

June 22, 2006

INFORMATION TECHNOLOGY

VA and DOD Face Challenges in Completing Key Efforts

What GAO Found

VA and DOD are implementing near-term demonstration projects that exchange limited electronic medical information between their existing systems, and they are making progress in their longer term effort to share information between the new health information systems that each is developing. Two demonstration projects have been implemented at selected sites: (1) a project to achieve the two-way exchange of health information on patients who receive care from both departments and (2) an application to electronically transfer laboratory work orders and results. According to VA and DOD, these projects have enabled lower costs and improved service to patients by saving time and avoiding errors. In their longer term effort, VA and DOD have made progress, in response to earlier GAO recommendations, by designating a lead entity with final decision-making authority and establishing a project management structure. However, VA and DOD have not yet developed a clearly defined project management plan that gives a detailed description of the technical and managerial processes necessary to satisfy project requirements, as GAO previously recommended. Moreover, the departments have experienced delays in their efforts to begin exchanging patient health data; they have not yet fully populated the repositories that will store the data for their future health systems. As a result, much work remains to be done before the departments achieve their ultimate goal of sharing virtual medical records.

VA has also been working to modernize the delivery of benefits through its development of VETSNET, but the pace of progress has been discouraging. Originally initiated in 1986, this program was prompted by the need to modernize VA's Benefits Delivery Network—parts of which are now 40-year-old technology—on which the department relies to make benefits payments, including compensation and pension, education, and vocational rehabilitation and employment. In 1996, after experiencing numerous false starts and spending approximately $300 million, VBA revised its strategy and narrowed its focus to modernizing the compensation and pension system. In earlier reviews, GAO has made numerous recommendations to improve the program's management, including the development of an integrated project plan. In response to GAO's recommendations as well as those of an independent evaluator, VA is now developing an integrated master plan for the compensation and pension system, which it intends to complete in August. Until VA addresses the managerial and program weaknesses that have hampered the program, it is uncertain when VA will be able to end its reliance on its aging benefits technology.

Mr. Chairman and Members of the Subcommittee:

I am pleased to participate in today's hearing on health information technology. As you know, the Departments of Veterans Affairs (VA) and Defense (DOD) are engaged in efforts to share electronic medical information, which is important in helping to ensure that active duty military personnel and veterans receive high-quality health care. Also important, in the face of current military responses to national and foreign crises, is ensuring effective and efficient delivery of veterans' benefits, which is the focus of VA's development of the Veterans Service Network (VETSNET), a modernized system to support benefits payment processes.

For the past 8 years, VA and DOD have been working to develop the ability to exchange patient health information electronically. As part of their efforts, each department is developing its own modern health information system—VA's HealtheVet VistA and DOD's Armed Forces Health Longitudinal Technology Application (AHLTA),[1] and they are collaborating on a program to develop an interface to enable these future systems to share data and ultimately to have interoperable[2] electronic medical records with computable data. That is, the data would be in a format that a computer application can act on: for example, to provide alerts to clinicians (of such things as drug allergies) or to plot graphs of changes in vital signs such as blood pressure. According to the departments, the availability of computable medical data contributes significantly to patient safety and the usefulness of electronic medical records.

In addition, responding to a congressional mandate,[3] VA and DOD initiated information technology demonstration projects in 2004 that

[1] In November 2005, DOD gave this name to its future health information system, previously known as Composite Health Care System (CHCS) II.

[2] Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged.

[3] The Bob Stump National Defense Authorization Act for Fiscal Year 2003, Pub. L. No. 107-314, §721 (a)(1), 116 Stat. 2589,2595 (2002). To further encourage on-going collaboration, section 721 directed the Secretary of Defense and the Secretary of Veterans Affairs to establish a joint program to identify and provide incentives to implement, fund, and evaluate creative health care coordination and sharing initiatives between DOD and VA.

focus on near-term goals: the exchange of electronic medical information between the departments' existing health information systems. These projects are to help in the evaluation of the feasibility, advantages, and disadvantages of measures to improve sharing and coordination of health care and health care resources. The two demonstration projects (Bidirectional Health Information Exchange and Laboratory Data Sharing Interface) are limited, interim initiatives that are separate from the departments' ongoing long-term efforts in sharing data and developing health information systems.

Another ongoing VA project is the development of VETSNET, which was prompted by the need to modernize VA's Benefits Delivery Network, parts of which are now 40-year-old technology. This project, which was originally initiated in 1986, is essential to ensure the continued accurate processing of benefits payments.

At your request, my testimony today will summarize our previous work and describe agency actions to respond to our recommendations in two areas.

- First, I will discuss VA's continued efforts to exchange medical information with DOD, including (1) near-term initiatives to exchange data between the agencies' existing systems and (2) progress in achieving the longer term goal of exchanging data between the departments' new systems, to be built around electronic patient health records.
- Second, I will discuss VA's ongoing project to modernize its Benefits Delivery Network and develop VETSNET.

To describe the current status of VA and DOD efforts to exchange medical information, we reviewed our previous work in this area, analyzed VA and DOD documentation to determine the implementation status of our open recommendations, and consulted with VA and DOD officials responsible for key decisions and actions on the health data-sharing initiatives. To describe VA's efforts on the VETSNET initiative, we reviewed our previous work in this area, analyzed documentation to determine the implementation status of our open recommendations—most specifically, the Carnegie Mellon Software Engineering Institute's Technical Assessment of the VETSNET project—and consulted with the Veterans Benefits

Administration officials responsible for key decisions and actions on the project. The costs that has been incurred for the various projects were provided by cognizant VA and DOD officials. We did not audit the reported costs and thus cannot attest to their accuracy or completeness. All work on which this testimony is based was conducted in accordance with generally accepted government auditing standards.

Results in Brief

VA and DOD are implementing limited, near-term demonstration projects, and they are making progress toward their long-term effort to share electronic patient health data. The two demonstration projects, which have been implemented at selected sites, have provided significant benefits, according to the two departments, because they enable lower costs and improved service to patients by saving time and avoiding errors:

- Bidirectional Health Information Exchange, implemented at 16 sites, allows the two-way exchange of health information on shared patients[4] in text format (including outpatient pharmacy data, drug and food allergy information, patient demographics, radiology results, and laboratory results[5]).
- The Laboratory Data Sharing Interface application, implemented at 6 sites, is used to facilitate the electronic transfer/sharing of orders for laboratory work and the results of the work.

In their longer term efforts to achieve a virtual medical record, VA and DOD have more to do to achieve the two-way electronic data exchange capability originally envisioned. They have made progress in, for example, preparing data for exchange, and they have implemented three of our four earlier recommendations (for

[4] Shared patients receive care from both VA and DOD clinicians. For example, veterans may receive outpatient care from VA clinicians and be hospitalized at a military treatment facility.

[5] These data are text files providing surgical, pathology, cytology, microbiology, chemistry, and hematology test results and descriptions of radiology results.

example, they have developed an architecture for the electronic interface between DOD's Clinical Data Repository and VA's Health Data Repository).[6] However, they have not yet developed a clearly defined project management plan that gives a detailed description of the technical and managerial processes necessary to satisfy project requirements, as we recommended. Moreover, the departments have experienced delays in their efforts to begin exchanging computable patient health data. The departments now expect that by the end of this month their joint facility in El Paso will begin to share computable outpatient pharmacy and medication allergy data, which will be able to support drug interaction checking and drug-allergy alerts.

As our and others' assessments of the VETSNET project over the years have determined, the development and implementation of this project have been hampered by inadequate project management and immature software development capabilities. VETSNET was originally intended to replace the aging Benefits Delivery Network, which makes about 3.5 million payments to veterans each month, including compensation and pension benefits, education benefits, and vocational rehabilitation and employment benefits. In 1996 the Veterans Benefits Administration (VBA) changed its focus to modernizing only the compensation and pension payment system. In our past reviews of the modernization project, we made a number of recommendations aimed at improving VBA's software development capabilities and program management, including that the agency establish an integrated project plan to guide its transition from the old to the new system. Although VBA took steps to respond to our recommendations, it did not establish an integrated project plan. In 2005, after postponing the target date for completion numerous times, VBA contracted for an independent assessment of its VETSNET program. This assessment concluded that the risks to the program arose not from technical issues, but from management and organizational issues like those that we had previously described. VBA reports that it is now developing a new integrated project plan

[6] The other two implemented recommendations were that they select a lead entity with final decision-making authority for the initiative and that they establish a project management structure to provide day-to-day guidance of and accountability for their investments in and implementation of the interface capability.

for the compensation and pension payment system that is to include realistic milestones. According to VBA, only after this plan is completed will it begin developing plans for modernizing the systems for education benefits and for vocational rehabilitation and employment benefits. Similarly, VBA has not yet developed plans for making the transition to VETSNET and ending dependence on the Benefits Delivery Network. Without plans to move from the current to the replacement system, VBA will lack assurance that it can continue to pay beneficiaries accurately and on time through the transition period.

Background

VA's mission is to promote the health, welfare, and dignity of all veterans in recognition of their service to the nation by ensuring that they receive medical care, benefits, social support, and lasting memorials. The information technology programs that I will be discussing today are primary concerns of two of VA's major components:[7] the Veterans Health Administration, which manages one of the largest health care systems in the United States, with 157 hospitals nationwide, and the Veterans Benefits Administration, which provides benefits and services to veterans and their dependents that include compensation and pension, education, loan guaranty, and insurance.

VA and DOD Have Been Working on Electronic Medical Records Since 1998

In 1998, following a presidential call for VA and DOD to start developing a "comprehensive, life-long medical record for each service member," the two departments began a joint course of action aimed at achieving the capability to share patient health information for active duty military personnel and veterans.[8] Their

[7] VA's third major component is the National Cemetery Administration, which is responsible for providing burial benefits to veterans and eligible dependents.

[8] Initially, the Indian Health Service (IHS) also was a party to this effort, having been included because of its population-based research expertise and its long-standing relationship with VA. However, IHS was not included in a later revised strategy for electronically sharing patient health information.

first initiative, undertaken in that year, was known as the Government Computer-Based Patient Record (GCPR) project; the goal of this project was an electronic interface that would allow physicians and other authorized users at VA and DOD health facilities to access data from any of the other agency's health information systems. The interface was expected to compile requested patient information in a virtual record that could be displayed on a user's computer screen.

In our reviews of the GCPR project, we determined that the lack of a lead entity, clear mission, and detailed planning to achieve that mission made it difficult to monitor progress, identify project risks, and develop appropriate contingency plans. In April 2001 and in June 2002,[9] we made recommendations to help strengthen the management and oversight of the project. In 2001, we recommended that the participating agencies (1) designate a lead entity with final decision-making authority and establish a clear line of authority for the GCPR project and (2) create comprehensive and coordinated plans that included an agreed-upon mission and clear goals, objectives, and performance measures, to ensure that the agencies could share comprehensive, meaningful, accurate, and secure patient health care data. In 2002, we recommended that the participating agencies revise the original goals and objectives of the project to align with their current strategy, commit the executive support necessary to adequately manage the project, and ensure that it followed sound project management principles.

VA and DOD took specific measures in response to our recommendations for enhancing overall management and accountability of the project. By July 2002, VA and DOD had revised their strategy and had made progress toward being able to electronically share patient health data. The two departments had refocused the project and named it the Federal Health Information Exchange (FHIE) program and, consistent with our prior recommendation, had finalized a memorandum of agreement

[9] GAO, *Veterans Affairs: Sustained Management Attention Is Key to Achieving Information Technology Results*, GAO-02-703 (Washington, D.C.: June 12, 2002) and *Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing*, GAO-01-459 (Washington, D.C.: Apr. 30, 2001).

designating VA as the lead entity for implementing the program. This agreement also established FHIE as a joint activity that would allow the transfer from DOD to VA of health care information in two phases:

- The first phase, completed in mid-July 2002, enabled the one-way transfer of data from DOD's existing health information system (the Composite Health Care System or CHCS) to a separate database that VA clinicians could access.
- A second phase, finalized in March 2004, completed VA's and DOD's efforts to add to the base of patient health information available to VA clinicians via this one-way sharing capability.

According to the December 2004 VA/DOD Joint Executive Council[10] Annual Report, FHIE was fully operational, and providers at all VA medical centers and clinics nationwide had access to data on separated service members. According to the report, the FHIE data repository at that time contained historical clinical health data on 2.3 million unique patients from 1989 on, and the repository made a significant contribution to the delivery and continuity of care and adjudication of disability claims of separated service members as they transitioned to veteran status. The departments reported total GCPR/FHIE costs of about $85 million through fiscal year 2003.

In addition, officials stated that in December 2004, the departments began to plan for using the FHIE framework to transfer pre- and postdeployment health assessment data from DOD to VA. According to these officials, transferring of this information began in July 2005, and VA has now received about 1.3 million of these records on more than 560,000 separated service members.

However, not all DOD medical information is captured in CHCS. For example, according to DOD officials, as of September 2005, 1.7 million patient stay records were stored in the Clinical Information System (a commercial product customized for DOD). In addition,

[10] The Joint Executive Council is composed of the Deputy Secretary of Veterans Affairs, the Undersecretary of Defense for Personnel and Readiness, and the co-chairs of joint councils on health, benefits, and capital planning. The council meets on a quarterly basis to recommend strategic direction of joint coordination and sharing efforts.

many Air Force facilities use a system called the Integrated Clinical Database for their medical information.

The revised DOD/VA strategy also envisioned achieving a longer term, two-way exchange of health information between DOD and VA, which may also address systems outside of CHCS. Known as HealthePeople (Federal), this initiative is premised on the departments' development of a common health information architecture comprising standardized data, communications, security, and high-performance health information systems. The joint effort is expected to result in the secured sharing of health data between the new systems that each department is currently developing and beginning to implement—DOD's AHLTA and VA's HealtheVet VistA.

- DOD began developing AHLTA in 1997.[11] DOD has completed a key component for the planned electronic interface—its Clinical Data Repository, and it expects to complete deployment of all of its major system capabilities by 2011.[12] (When we reported in June 2004, this deployment was expected in September 2008.) DOD expects to spend about $783 million for the system through fiscal year 2006.[13]
- VA began work on HealtheVet VistA and its associated Health Data Repository in 2001 and expected to complete all six initiatives comprising this system in 2012. VA reported spending about $514 million on initiatives that comprise HealtheVet VistA through fiscal year 2005.[14]

[11] At that time it was known as CHCS II. In November 2005, DOD renamed CHCS II the Armed Forces Health Longitudinal Technology Application (AHLTA).

[12] DOD's AHLTA capabilities are being deployed incrementally. The first increment provides a graphical user interface for clinical outpatient processes, thus providing an electronic medical record capability. According to DOD, the first increment has been deployed to 115 of the 138 DOD health facilities.

[13] These expenditures represent total implementation and start-up costs and include, among other things, procurement, acquisition operations, and maintenance used for the development, integration, and deployment of the system.

[14] The six initiatives that make up HealtheVet VistA are the Health Data Repository, billing replacement, laboratory, pharmacy, imaging, and appointment scheduling replacement. This amount includes investments in these six initiatives by VA as reported in its submission to the Office of Management and Budget for fiscal year 2005.

Under the HealthePeople (Federal) initiative, VA and DOD envision that, on entering military service, a health record for the service member would be created and stored in DOD's Clinical Data Repository. The record would be updated as the service member receives medical care. When the individual separated from active duty and, if eligible, sought medical care at a VA facility, VA would then create a medical record for the individual, which would be stored in its Health Data Repository. On viewing the medical record, the VA clinician would be alerted and provided with access to the individual's clinical information residing in DOD's repository. In the same manner, when a veteran sought medical care at a military treatment facility, the attending DOD clinician would be alerted and provided with access to the health information in VA's repository. According to the departments, this planned approach would make virtual medical records displaying all available patient health information from the two repositories accessible to both departments' clinicians.

To achieve this goal requires the departments to be able to exchange computable health information between the data repositories for their future health systems: that is, VA's Health Data Repository (a component of HealtheVet VistA) and DOD's Clinical Data Repository (a component of AHLTA). In March 2004, the departments began an effort to develop an interface linking these two repositories, known as CHDR (a name derived from the abbreviations for DOD's Clinical Data Repository—CDR—and VA's Health Data Repository—HDR). According to the departments,[15] they planned to be able to exchange selected health information through CHDR by October 2005. However, by September 2005, this deadline had slipped to February 2006 (and now to the end of June).

Developing the two repositories, populating them with data, and linking them through the CHDR interface would be important steps toward the two departments' long-term goals as envisioned in HealthePeople (Federal). Achieving these goals would then depend on completing the development and deployment of the associated health information systems—HealtheVet VistA and AHLTA.

[15] December 2004 VA and DOD Joint Strategic Plan.

In a review of the CHDR program in June 2004,[16] we reported that the efforts of DOD and VA in this area demonstrated a number of management weaknesses. Among these were the lack of a well-defined architecture for describing the interface for a common health information exchange; an established project management lead entity and structure to guide the investment in the interface and its implementation; and a project management plan defining the technical and managerial processes necessary to satisfy project requirements. With these critical components missing, VA and DOD increased the risk that they would not achieve their goals. Accordingly, we recommended that the departments

- develop an architecture for the electronic interface between their health systems that includes system requirements, design specifications, and software descriptions;
- select a lead entity with final decision-making authority for the initiative;
- establish a project management structure to provide day-to-day guidance of and accountability for their investments in and implementation of the interface capability; and
- create and implement a comprehensive and coordinated project management plan for the electronic interface that defines the technical and managerial processes necessary to satisfy project requirements and includes (1) the authority and responsibility of each organizational unit; (2) a work breakdown structure for all of the tasks to be performed in developing, testing, and implementing the software, along with schedules associated with the tasks; and (3) a security policy.

In September 2005, we testified that VA and DOD had made progress in the electronic sharing of patient health data in their near-term demonstration projects. We noted that with regard to their long-term goals, the departments had improved the management of the CHDR program, but that this program continued to face significant challenges—in particular, developing a project

[16] GAO, *Computer-Based Patient Records: VA and DOD Efforts to Exchange Health Data Could Benefit from Improved Planning and Project Management*, GAO-04-687 (Washington, D.C.: June 7, 2004).

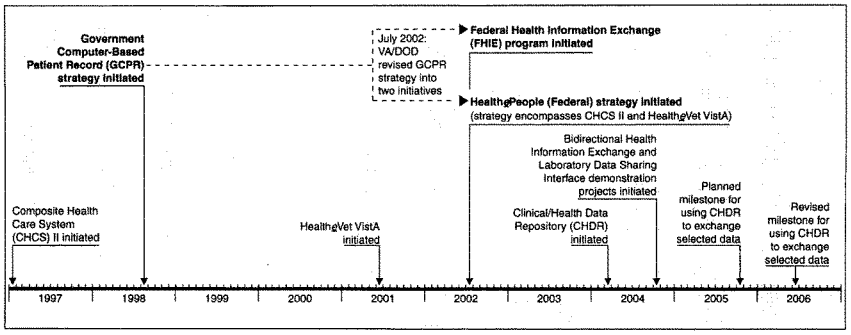
management plan of sufficient specificity to be an effective guide for the program.[17]

Besides pursuing their long-term goals for future systems through the HealthePeople (Federal) strategy, the departments are working on two demonstration projects that focus on exchanging information between existing systems: (1) Bidirectional Health Information Exchange, a project to exchange health information on shared patients, and (2) Laboratory Data Sharing Interface, an application used to transfer laboratory work orders and results. These demonstration projects were planned in response to provisions of the Bob Stump National Defense Authorization Act of 2003, which mandated that VA and DOD conduct demonstration projects that included medical information and information technology systems to be used as a test for evaluating the feasibility, advantages, and disadvantages of measures and programs designed to improve the sharing and coordination of health care and health care resources between the departments.

Figure 1 is a time line showing initiation points for the VA and DOD efforts discussed here, including strategies, major programs, and the recent demonstration projects.

[17] GAO, *Computer-Based Patient Records: VA and DOD Made Progress, but Much Work Remains to Fully Share Medical Information*, GAO-05-1051T (Washington, D.C.: Sept. 28, 2005).

Figure 1: History of Selected VA/DOD Electronic Medical Records and Data Sharing Efforts



Source: GAO analysis of VA and DOD data.

Work on VETSNET Dates to 1986

The VETSNET effort grew out of an initiative begun by the Veterans Benefits Administration (VBA) in 1986 to replace its outdated Benefits Delivery Network. The Benefits Delivery Network, parts of which were developed in the 1960s, contains over 3 million veterans benefits records, including compensation and pension, education, and vocational rehabilitation and employment. Originally, the plan was to modernize all of these systems and in so doing provide a rich source for answering questions about veterans' benefits and enable faster processing of benefits. As envisioned in the 1980s, the modernization would produce a faster, more flexible, higher capacity system that would be both an information system and a payment system. In 1996, after experiencing numerous false starts and spending approximately $300 million on the overall modernization of BDN, VBA revised its strategy and narrowed its focus to modernizing the compensation and pension payment system.

At that time, we undertook an assessment of the department's software development capability[18] and determined that it was immature. In our assessment, we specifically examined the VETSNET effort and concluded that VBA could not reliably develop and maintain high-quality software on any major project within existing cost and schedule constraints. VBA showed significant weaknesses in requirements management, software project planning, and software subcontract management, with no identifiable strengths. We also testified that (1) VBA did not follow sound systems development practices on VETSNET, such as validation and verification of systems requirements; (2) it employed for the project a new systems development methodology and software development language not previously used; and (3) it did not develop the cost-benefit information necessary to track progress or assess return on investment (for example, total software to be developed and cost estimates).[19] As a result, we concluded that VBA's modernization efforts had inherent risks.

Between 1996 and 2002 we reported several more times on VETSNET, highlighting concerns in several areas. (See attachment 1 for a description of the conclusions and findings of our products on this topic.) In these products, we made several recommendations aimed at improving VA's software development capabilities, including that the department take steps to achieve greater maturity in its software development processes[20] and that it delay any major investment in software development (beyond that needed to sustain critical day-to-day operations) until it had done so. In addition, we made recommendations aimed specifically at VETSNET development, including that VBA assess and validate users' requirements for the new system; complete testing of the system's

[18] GAO, *Software Capability Evaluation: VA's Software Development Process Is Immature*, GAO/AIMD-96-90 (Washington, D.C.: June 19, 1996).

[19] GAO, *Veterans Benefits Modernization: Management and Technical Weaknesses Must Be Overcome If Modernization Is to Succeed*, GAO/T-AIMD-96-103 (Washington, D.C.: June 19, 1996).

[20] Specifically, at the repeatable level of process maturity, basic project management processes are established to track cost, schedule, and functionality, and the necessary process discipline is in place to repeat earlier successes on projects with similar applications.

functional business capability, as well as end-to-end testing to ensure that payments are made accurately; and establish an integrated project plan to guide its transition from the old to the new system.

Although VBA took various actions in response to these recommendations, we continued to identify the department's weak software development capability as a significant factor contributing to VBA's persistent problems in developing and implementing the system—the same condition that we identified in 1996. We also reported that VBA continued to work on VETSNET without an integrated project plan. As a result, the development of VETSNET continued to suffer from problems in several areas, including project management, requirements development, and testing.

VA and DOD Are Working to Share Medical Information

VA and DOD have made progress in sharing patient health data by implementing applications developed under two demonstration projects that focus on the exchange of electronic medical information. The first—the Bidirectional Health Information Exchange—has been implemented at 16 VA/DOD locations, and the second—Laboratory Data Sharing Interface—has been implemented at 6 VA/DOD locations.

Bidirectional Health Information Exchange. According to a VA/DOD annual report and program officials, Bidirectional Health Information Exchange (BHIE) is an interim step in the departments' overall strategy to create a two-way exchange of electronic medical records. BHIE builds on the architecture and framework of FHIE, the application used to transfer health data on separated service members from DOD to VA. As discussed earlier, FHIE provides an interface between VA's and DOD's existing health information systems that allows one-way transfers only, which do not occur in real time: VA clinicians do not have access to transferred information until about 6 weeks after separation. In contrast, BHIE

focuses on the two-way, near-real-time[21] exchange of information (text only) on shared patients (such as those at sites jointly occupied by VA and DOD facilities). This application exchanges data between VA's VistA system and DOD's CHCS system (and AHLTA where implemented). As of September 2005, the departments reported having spent $2.6 million on BHIE.[22]

The primary benefit of BHIE is near-real-time access to patient medical information for both VA and DOD, which is not available through FHIE. During a site visit to a VA and DOD location in Puget Sound in 2005, we viewed a demonstration of this capability and were told by a VA clinician that the near-real-time access to medical information was very beneficial in treating shared patients.

As of June 2006, BHIE was deployed at VA and DOD facilities at 16 sites, where the exchange of demographic, outpatient pharmacy, radiology, laboratory, and allergy data (text only) has been achieved. In addition, according to officials, over 120 outpatient military clinics associated with these sites also have access to this information through BHIE. According to VA and DOD, BHIE will be implemented at two more sites in July 2006.[23] Table 1 presents a schedule for implementation of BHIE; the sites listed are all DOD sites with nearby VA facilities.

Table 1: Implementation of BHIE at Selected DOD Facilities

Facility	Implementation date
Madigan Army Medical Center, Fort Lewis, Puget Sound, Wash.	October 2004
William Beaumont Army Medical Center, El Paso, Tex.	October 2004
Eisenhower Army Medical Center, Fort Gordon, Ga.	September 2005
Naval Hospital Great Lakes, Great Lakes, Ill.	September 2005

[21] Officials reported that on average, response time is less than 30 seconds.

[22] VA reported spending $2.4 million on BHIE through fiscal year 2006. DOD reported spending $63.2 million through fiscal year 2006 for BHIE, FHIE, LDSI, and CHDR; it did not provide a breakdown for individual programs.

[23] According to the program manager, implementation of BHIE requires training of staff from both departments. In addition, implementation at DOD facilities requires installation of a server; implementation at VA facilities requires installation of a software patch (downloaded from a VA computer center), but no additional equipment.

Facility	Implementation date
Naval Medical Center, San Diego, Calif.	September 2005
National Naval Medical Center, Bethesda, Md.	November 2005
Walter Reed Army Medical Center, Washington, D.C.	November 2005
Malcolm Grow Medical Center, Andrews Air Force Base, Md.	November 2005
Mike O'Callaghan Federal Hospital, Nellis Air Force Base, Nev.	November 2005
Landstuhl Regional Medical Center, Landstuhl, Germany	March 2006
Tripler Army Medical Center, Honolulu, Hawaii	April 2006
Womack Army Medical Center, Fort Bragg, N.C.	April 2006
David Grant Medical Center, Travis Air Force Base, Calif.	April 2006
Brooke Army Medical Center, San Antonio, Tex.	May 2006
Wilford Hall Medical Center, San Antonio, Tex.	May 2006
Bassett Army Community Hospital, Fort Wainwright, Alaska	May 2006
Naval Hospital, Jacksonville, Fla.	Planned for July 2006
Naval Hospital, Charleston, S.C.	Planned for July 2006

Sources: VA and DOD.

Note: VA facilities are sited near all the DOD facilities shown.

Additionally, because DOD stores electronic medical information in systems other than CHCS (such as the Clinical Information System and the Integrated Clinical Database), work is currently under way to allow BHIE to have the ability to exchange information with those systems. Currently, one site is testing the use of BHIE as an interface allowing both departments' staff to view discharge summaries stored in the Clinical Information System.[24] DOD and VA plan to perform a side-by-side comparison to ensure that this capability maintains data quality. When they are satisfied, the capability will be provided to those DOD locations that currently use the Clinical Information System and have BHIE implemented. Doing so will permit all VA sites access to the information in the Clinical Information System on shared patients at DOD sites running BHIE.

In addition, at the VA/DOD site in El Paso, a prototype is being designed for exchanging radiological images using the BHIE/FHIE infrastructure. If the prototype is successful, this capability will be extended to the rest of the sites.

[24] VA and DOD are planning to initiate the pilot at a second site in August 2006.

Laboratory Data Sharing Interface. The Laboratory Data Sharing Interface (LDSI) initiative enables the two departments to share laboratory resources. Through LDSI, a VA provider can use VA's health information system to write an order for laboratory tests, and that order is electronically transferred to DOD, which performs the test. The results of the laboratory tests are electronically transferred back to VA and included in the patient's medical record. Similarly, a DOD provider can choose to use a VA lab for testing and receive the results electronically. Once LDSI is fully implemented at a facility, the only nonautomated action in performing laboratory tests is the transport of the specimens.

Among the benefits of LDSI are increased speed in receiving laboratory results and decreased errors from manual entry of orders. However, according to the LDSI project manager in San Antonio, a primary benefit of the project will be the time saved by eliminating the need to rekey orders at processing labs to input the information into the laboratories' systems. Additionally, the San Antonio VA facility will no longer have to contract out some of its laboratory work to private companies, but instead use the DOD laboratory. As of September 2005, the departments reported having spent about $3.3 million on LDSI.[25]

An early version of what is now LDSI was originally tested and implemented at a joint VA and DOD medical facility in Hawaii in May 2003. The demonstration project built on this application and enhanced it; the resulting application was tested in San Antonio and El Paso. It has now been deployed to six sites. According to the departments, a plan to export LDSI to two additional locations has been approved. Table 2 shows the locations at which it has been or is to be implemented.

[25] VA reported spending $1 million on LDSI through fiscal year 2006. DOD reported spending $63.2 million through fiscal year 2006 for BHIE, FHIE, LDSI, and CHDR; it did not provide a breakdown for individual programs.

Table 2: Implementation of LDSI at VA/DOD Facilities

Facility	Implementation date
Tripler Army Medical Center and VA Spark M. Matsunaga Medical Center, Hawaii	May 2003
Kirtland Air Force Base and Albuquerque VA Medical Center, N.Mex.[a]	May 2003
Naval Medical Center and San Diego VA Health Care System, Calif.	July 2004
Great Lakes Naval Hospital and VA Medical Center, Ill.	October 2004
William Beaumont Army Medical Center, El Paso, Tex.	October 2004
Brooke Army Medical Center, San Antonio, Tex.	August 2005
Bassett Army Community Hospital, Alaska	Planned for June 2006
Nellis Air Force Base, Nev.	Planned for September 2006

Sources: VA and DOD.

[a]According to officials, although LDSI was implemented at this site, it is no longer being actively used.

VA and DOD Are Taking Action to Achieve a Virtual Medical Record, but Much Work Remains

Besides the near-term initiatives just discussed, VA and DOD continue their efforts on the longer term goal: to achieve a virtual medical record based on the two-way exchange of computable data between the health information systems that each is currently developing. The cornerstone for this exchange is CHDR, the planned electronic interface between the data repositories for the new systems.

The departments have taken important actions on the CHDR initiative. As we testified in September 2005,[26] they successfully completed Phase I of CHDR in September 2004 by demonstrating the two-way exchange of pharmacy information with a prototype in a controlled laboratory environment.[27] According to department

[26] GAO, *Computer-Based Patient Records: VA and DOD Made Progress, but Much Work Remains to Fully Share Medical Information,* GAO-05-1051T (Washington, D.C.: Sept. 28, 2005).

[27] The completion of the pharmacy prototype project satisfied a mandate of the 2003 Bob Stump National Defense Authorization Act, Pub. L. 107-314, sec. 724 (2002).

officials, the pharmacy prototype provided invaluable insight into each other's data repository systems, architecture, and the work that is necessary to support the exchange of computable information. These officials stated that lessons learned from the development of the prototype were documented and being applied to Phase II of CHDR, the production phase, which is to implement the two-way exchange of patient health records between the departments' data repositories. Further, the same DOD and VA teams that developed the prototype were developing the production version.

In addition, the departments developed an architecture for the CHDR electronic interface, as we recommended in June 2004. The architecture for CHDR includes major elements required in a complete architecture. For example, it defines system requirements and allows these to be traced to the functional requirements, it includes the design and control specifications for the interface design, and it includes design descriptions for the software.

Also in response to our recommendations, the departments established project accountability and implemented a joint project management structure. Specifically, the Health Executive Council was established as the lead entity for the project. The joint project management structure consists of a Program Manager from VA and a Deputy Program Manager from DOD to provide day-to-day guidance for this initiative. Additionally, the Health Executive Council established the DOD/VA Information Management/Information Technology Working Group and the DOD/VA Health Architecture Interagency Group, to provide programmatic oversight and to facilitate interagency collaboration on sharing initiatives between DOD and VA.

To build on these actions and successfully carry out the CHDR initiative, however, the departments still have a number of challenges to overcome. The success of CHDR will depend on the departments' instituting a highly disciplined approach to the project's management. Industry best practices and information technology project management principles stress the importance of accountability and sound planning for any project, particularly an interagency effort of the magnitude and complexity of this one.

Accordingly, in 2004 we recommended that the departments develop a clearly defined project management plan that describes the technical and managerial processes necessary to satisfy project requirements and includes (1) the authority and responsibility of each organizational unit; (2) a work breakdown structure for all of the tasks to be performed in developing, testing, and implementing the software, along with schedules associated with the tasks; and (3) a security policy. As of September 2005, the departments had an interagency project management plan that provided the program management principles and procedures to be followed by the project. However, this plan did not specify the authority and responsibility of organizational units for particular tasks; the work breakdown structure was at a high level and lacked detail on specific tasks and time frames; and security policy was still being drafted. No more recent plan has yet been provided. Without a plan of sufficient detail, VA and DOD increase the risk that the CHDR project will not deliver the planned capabilities in the time and at the cost expected.

In addition, officials did not meet a previously established milestone: by October 2005, the departments had planned to be able to exchange outpatient pharmacy data, laboratory results, allergy information, and patient demographic information on a limited basis. However, according to officials, the work required to implement standards for pharmacy and medication allergy data was more complex than originally anticipated and would result in a delay. The new target date for the limited exchange of medication allergy, outpatient pharmacy, and patient demographic data has been postponed from February to June 2006.

Currently, the departments report that they are close to finishing the development of a pilot to perform this data exchange at their joint facility in El Paso. They expect to be able to begin the pilot by the end of this month, which will allow them to share outpatient pharmacy and medication allergy information that can support drug-drug interaction checking and drug-allergy alerts. If the pilot is successful, it will enable for the first time the exchange of computable information between the departments' two data repositories.

Finally, the health information currently in the data repositories has various limitations.

- Although DOD's Clinical Data Repository includes data in the categories that were to be exchanged at the missed milestone described above (outpatient pharmacy data, laboratory results, allergy information, and patient demographic information), these data are not yet complete. First, the information in the Clinical Data Repository is limited to those locations that have implemented the first increment of AHLTA, DOD's new health information system. As of June 15, 2006, according to DOD officials, 115 of 138 medical treatment facilities worldwide have implemented this increment, and officials expect that the remaining facilities will receive the increment by the end of this year. Second, at present, health information in systems other than CHCS (such as the Clinical Information System and the Integrated Clinical Database) is not yet being captured in the Clinical Data Repository. However, work is currently under way to allow BHIE to have the ability to exchange information with those systems.
- The information in VA's Health Data Repository is also limited: although all VA medical records are currently electronic, VA has to convert these into the interoperable format appropriate for the Health Data Repository. So far, the data in the Health Data Repository consist of patient demographics, vital signs records, allergy data, and outpatient pharmacy data for the 6 million veterans who have electronic medical records in VA's current system, VistA (this system contains all the department's medical records in electronic form). VA officials told us that they are currently converting lab results data.

VA Has Been Severely Challenged by VETSNET Project

Since its inception, the VETSNET program has been plagued by problems. In 2002, we offered a number of recommendations regarding the ongoing compensation and pension (C&P) replacement program. We testified that VBA should assess and validate users' requirements for the new system and complete testing of the system's functional business capability, including end-

to-end testing.[28] We also recommended that VA appoint a project manager, thoroughly analyze its current initiative, and develop a number of plans, including a revised C&P replacement strategy and an integrated project plan. We also noted that VBA had much work to do before it could fully implement the VETSNET C&P system by its target date (at that time) of 2005, and thus it would have to ensure that the aging Benefits Delivery Network (BDN) would be available to continue accurately processing benefits payments until a new system could be deployed. Accordingly, we recommended that VBA develop action plans to move from the current to the replacement system and to ensure the availability of BDN to provide the more than 3.5 million payments made to veterans each month.[29]

VA concurred with our recommendations and took several actions to address them. For example, it appointed a full-time project manager. Also, the project team reported that to ensure that business needs were met, certification had been completed of users' requirements for the system's applications.

In addition, VA reported that a revised strategy for the replacement system was completed. This revised strategy included the business case, described the methodology used to identify system development alternatives, displayed the cost/benefit analysis results of the viable alternatives that could be used to develop the system, and provided a description of the recommended development plan. Based on this strategy, the Secretary of Veterans Affairs, Assistant Secretary for Information and Technology, the Under Secretary for Benefits, and the Deputy Chief Information Officer for Benefits approved continuation of the VETSNET development in September 2002.

Further, to ensure that the benefits delivery network would be able to continue accurately processing benefits payment until the new system was deployed, VBA purchased additional BDN hardware, hired 11 new staff members to support BDN operations,

[28] GAO, *VA Information Technology: Progress Made, but Continued Management Attention Is Key to Achieving Results*, GAO-02-369T (Washington, D.C.: Mar. 13, 2002).

[29] GAO, *Veterans Affairs: Sustained Management Attention Is Key to Achieving Information Technology Results*, GAO-02-703 (Washington, D.C.: June 12, 2002).

successfully tested a contingency plan in the event of disruption of the system, and provided retention bonuses to staff familiar with BDN operations.

However, VBA did not develop an integrated project plan for VETSNET, which is a basic requirement of sound project management. In addition, it did not develop an action plan for transitioning from the current to the replacement system. Thus, although the actions taken addressed some of our specific concerns, they were not sufficient to establish the program on a sound footing.

In 2005, the VA CIO became concerned by continuing problems with VETSNET: the project continued to postpone target dates, and costs continued to increase (VA indicated that by 2005 these costs exceeded $69 million). Accordingly, he arranged to contract for an independent assessment of the department's options for the VETSNET project, including an evaluation of whether the program should be terminated. This assessment, conducted by the Carnegie Mellon Software Engineering Institute (SEI), concluded that the program faced many risks arising from management, organizational, and program issues, but no technical barriers that could not be overcome.[30] According to SEI, terminating the program would not solve the underlying management and organizational problems, which would continue to hamper any new or revised effort.

SEI recommended that the department not terminate the program but take an aggressive approach to dealing with the issues SEI described while continuing to work on the program at a reduced pace. According to SEI, this approach would allow VA to make necessary improvements to its system and software engineering and program management capabilities while making gradual progress on the system. SEI also discussed specific concerns about the system's management and the organization's capabilities, presenting areas that required focus regardless of the particular course that VA chose for the system. For example:

[30] Kathryn Ambrose, William Novak, Steve Palmquist, Ray Williams, and Carol Woody, *Report of the Independent Technical Assessment on the Department of Veterans Affairs VETSNET Program* (Carnegie Mellon Software Engineering Institute, September 2005).

- Setting realistic deadlines. SEI commented that there was no credible evidence that VETSNET would be complete by the target date, which at the time of the SEI review was December 2006. Because this deadline was unrealistic, VBA needed to plan and budget for supporting BDN so that its ability to pay veterans benefits would not be disrupted.
- Establishing an effective requirements process.
- Implementing effective program measurements in order to assess progress.
- Establishing sound program management. According to SEI, different organizational components had independent schedules and priorities, which caused confusion and deprived the department of a program perspective.

These observations are consistent with our long-standing concerns regarding fundamental deficiencies in VBA's management of the project.

In the wake of the SEI assessment and recommendations, VA is in the process of creating, with contract help, an integrated master plan that is to cover the C&P replacement project. Because this plan is in process, no cost or schedule milestones have yet been finalized. According to VA, the integrated master plan is to be completed by the end of August 2006.

VA officials told us that they intend to complete this plan before beginning to plan for modernizing the systems for paying education benefits or for paying vocational rehabilitation and employment benefits. Plans for making the transition to VETSNET and ending VBA's dependence on BDN are also on hold.

Thus, VA still lacks an integrated project plan or a plan to move from the current to the replacement system. Until it has an integrated project plan and schedule incorporating all the critical areas of the system development effort, VBA will lack the means of determining what needs to be done and when, and of measuring progress. Without plans to move from the current to the replacement system, VBA will lack assurance that it can continue to pay beneficiaries accurately and on time through the transition period.

In summary, developing an electronic interface that will enable VA and DOD to exchange computable patient medical records is a highly complex undertaking that could lead to substantial benefits—improving the quality of health care and disability claims processing for the nation's service members and veterans. VA and DOD have made progress in the electronic sharing of patient health data in their limited, near-term demonstration projects, and have taken an important step toward their long-term goals by improving the management of the CHDR program. However, the departments face considerable work and significant challenges before they can achieve these long-term goals. While the departments have made progress in developing a project management plan, it is not yet complete. Having a project management plan of sufficient specificity to guide the program—including establishing accountability and addressing security—would help the departments avoid further delays in their schedule and ensure that they produce a capability that meets their expectations.

VA has also been working to modernize the delivery of benefits through its development of VETSNET, but the pace of progress has been discouraging. Much work remains in accomplishing the original comprehensive goal of modernizing the aging system that VBA currently depends on to pay veterans benefits. Until VBA develops an integrated project plan that addresses the long-standing management weaknesses that we and others have identified, it will be uncertain when and at what cost VETSNET will be delivered.

Mr. Chairman, this concludes my statement. I would be pleased to respond to any questions that you or other members of the Subcommittee may have at this time.

Contacts and Acknowledgments

For information about this testimony, please contact Linda D. Koontz, Director, Information Management Issues, at (202) 512-6240 or at koontzl@gao.gov. Other individuals making key contributions to this testimony include Barbara S. Collier, Martin Katz, Barbara S. Oliver, Eric L. Trout, Robert Williams Jr., and Charles Youman.

Attachment 1. Past GAO Products Highlighting VETSNET Concerns

We previously performed several reviews addressing VETSNET and made numerous recommendations aimed at strengthening the program and VA's software development and management capabilities. The table summarizes the results of these reviews.

GAO Products Highlighting Concerns with VETSNET Project to Replace Compensation and Pension (C&P) Payment System

Issuance date Report/testimony	Results of review
June 19, 1996 GAO/T-AIMD-96-103	VETSNET had inherent risks in that (1) it did not follow sound systems development practices, such as validation and verification of systems requirements; (2) it employed a new systems development methodology and software development language not previously used; and (3) VBA did not develop the cost-benefit information necessary to track progress or assess return on investment (for example, total software to be developed and cost estimates).
June 19, 1996 GAO/AIMD-96-90	VBA's software development capability was immature and it could not reliably develop and maintain high-quality software on any major project within existing cost and schedule constraints, placing its software development projects at significant risk. VBA showed significant weaknesses in requirements management, software project planning, and software subcontract management, with no identifiable strengths.
May 30, 1997 GAO/AIMD-97-79	VETSNET experienced schedule delays and missed deadlines because (1) it employed a new software development language not previously used by the development team, one that was inconsistent with the agency's other systems development efforts; (2) the department's software development capability was immature and it had lost critical systems control and quality assurance personnel, and (3) VBA lacked a complete systems architecture; for example, neither a security architecture nor performance characteristics had been defined for the project.
September 15, 1997 GAO/AIMD-97-154	VBA's software development capability remained ad hoc and chaotic, subjecting the agency to continuing risk of cost overruns, poor quality software, and schedule delays in software development.
May 11, 2000 GAO/T-AIMD-00-74	$11 million had reportedly been spent on VETSNET C&P; neither the May 1998 completion date nor the revised completion date of December 1998 were met. Contributing factors included lack of an integrated architecture defining the business processes, information flows and relationships, business requirements, and data descriptions, and VBA's immature software development capability.
September 21, 2000 GAO/T-AIMD-00-321	VBA's software development capability remained ad hoc and chaotic. The VETSNET implementation approach lacked key elements, including a strategy for data conversion and an integrated project plan and schedule incorporating all critical systems development areas. Further, data exchange issues had not been fully addressed.
April 4, 2001 GAO-01-550T	The project's viability was still a concern. It continued to lack an integrated project plan and schedule addressing all critical systems development areas, to be used as a means of determining what needs to be done and when. A pilot test of 10 original claims that did not require significant development work may not have been sufficient to demonstrate that the product was capable of working as intended in an organizationwide operational setting.
March 13, 2002 GAO-02-369T	VBA still had fundamental tasks to accomplish before it could successfully complete development and implementation. It still had to assess and validate users' requirements for the new system to ensure that business needs were met. It needed to complete testing of the system's functional business capability, as well as end-to-end testing to ensure that payments would be made accurately. Finally, it needed to establish an integrated project plan to guide its transition from the old to the new system.

Issuance date Report/testimony	Results of review
June 12, 2002 GAO-02-703	VA still needed to address long-standing concerns regarding development and implementation. VA needed to appoint a project manager, undertake a complete analysis of the initiative, and develop plans, including a revised C&P replacement system strategy and an integrated project plan. It also needed to develop and implement action plans to move VBA from the current to the replacement system and to ensure that the Benefits Delivery Network would be able to continue accurately processing benefits payments until the new system was deployed.
September 26, 2002 GAO-02-1054T	Much work remained before VBA could fully implement the VETSNET C&P system, and complete implementation was not expected until 2005. This meant that VBA had to continue relying on its aging Benefits Delivery Network to provide the more than 3.5 million payments that VA had to make to veterans each month. In late March, a VETSNET executive board and a project control board were established to provide decision support and oversee implementation, and VBA expected to hire a full-time project manager by the end of September. VBA also began revalidating functional business requirements for the new system, with completion planned by January 2003, and it identified actions needed to transition VBA from the current to the replacement system. VBA also hired a contractor and tasked the contractor with conducting functional, integration, and linkage testing, as well as software quality assurance for each release of the system applications. Despite these actions, completing implementation of the new system could take several years. All but one of the software applications for the new system still needed to be fully deployed or developed. Specifically, a rating board automation tool (RBA 2000) was deployed, although VBA did not plan to require all its regional offices to use it until July 2003. In addition, two others had not been completely deployed: one of these (Share, used to establish a new claim) was in use by only 6 of the 57 regional offices. The other (Modern Award Processing–Development, used to develop information on claims) was in pilot testing at two regional offices—Salt Lake and Little Rock—but was not expected to be implemented at the other 55 regional offices until October 2003. The remaining three software applications (Award Processing, Finance and Accounting System, and Correspondence) were still in development.

Source: GAO.

Prepared Statement

of

Mr. Carl E. Hendricks

Military Health System Chief Information Officer

Before the Subcommittee on Federal Financial Management, Government

Information and International Security

Committee on Homeland Security and Governmental Affairs

U.S. Senate

June 22, 2006

Mr. Chairman and distinguished members of the Committee, thank you for the opportunity to discuss one important area of the many ongoing collaboration efforts being made by the Department of Defense (DoD) and the Department of Veterans Affairs (VA). I would like to highlight the important area of information technology today. DoD/VA sharing efforts involve the transformation of health care through health information technology. Sharing of electronic health information is vitally important to provide continuity of care to those who are and have served our country. Equally important is the need to ensure this information is shared in a manner that protects the data and the privacy of our population. DoD/VA's efforts lay the foundation for the President's health technology plan of improving health care quality, preventing medical errors, enhancing administrative efficiencies, reducing paperwork, and increasing access through innovations and improvements in electronic medical records and the secure exchange of health information.

Military Health System Technology

For more than a decade, DoD has been a national leader in using one of the world's first and largest computerized physician order entry systems, the Composite Health Care System (CHCS). DoD recognizes the value of secure and on-demand accessible computerized patient information as a substantive way to enhance both patient safety and the quality of health care delivery, and we are committed to working with the VA to support our veterans.

CHCS provides the backbone for the very successful Pharmacy Data Transaction Service (PDTS) that maintains a patient medication record for all DoD beneficiaries worldwide. A cutting-edge benefit for beneficiaries and providers alike, PDTS is the primary resource for ensuring pharmaceutical readiness for our deploying personnel. Through an automated tool, PDTS reviews a beneficiary's new prescription against all previous prescriptions filled through any point of service in the Military Health System, including the 70 Military Inpatient Facilities, the TRICARE Retail Pharmacy network, and the TRICARE Mail Order Pharmacy program. PDTS has enhanced the quality of prescription services and patient safety by reducing adverse drug to drug interactions, preventing duplicate treatments and preventing orders of the same drug being obtained from multiple sources. Each prescription undergoes clinical screening against a patient's complete medication history before it is dispensed to the beneficiary. Use of the PDTS has resulted in higher quality medical care based on proper medication control, reduction of fraud and abuse, better management reporting and control, and most importantly, increased patient safety. All prescription information transmitted to PDTS is encrypted for security and privacy.

AHLTA is DoD's enterprise-wide medical information system that generates, maintains and provides worldwide secure online access to comprehensive patient records. AHLTA, DoD's electronic medical record, is a Windows-based application that provides a user-friendly interface with improved coding and expanded documentation of medical care. AHLTA is a secure, standards-based and patient centric system, for use both in our garrison- based medical facilities and our forward deployed medical units. AHLTA is a

core component of military medical readiness, supporting uniform, secure, high-quality health care delivery and continuity of care to Military Health System beneficiaries. By streamlining and computerizing business processes and scheduling systems, AHLTA stresses a team-based approach to health care and improves hospitals' and clinics' efficiency in providing timely service to patients. Additionally, efficient, secure, and readily accessible communication among providers improves the continuity of care and increases patient safety and the timeliness of diagnoses and treatments. It centrally stores all electronic patient medical records in the Clinical Data Repository that currently contains some level of electronic clinical records for over 8.1 million beneficiaries. Use of AHLTA continues to grow at a significant pace. To date, AHLTA has processed over 22 million outpatient encounters, and is currently processing over 80,000 patient encounters per workday. Worldwide deployment of AHLTA began in January 2004, and is expected to be completed by the end of calendar year 2006, at which point AHLTA will be available for over 9.2 million beneficiaries.

Interagency Collaboration

DoD and VA have launched a new era of Departmental collaboration, with unprecedented strides toward enhancing our federal partnership. Through our VA/DoD Health and Joint Executive Councils, we ensure senior leadership in both departments have oversight on all of our joint initiatives as we continue to develop our strategic partnership. Our shared commitment to strong collaboration in the area of information

technology places us in the forefront of interagency health information technology across the federal government.

DoD is an active participant in the American Health Information Community (the Community) and several of its subcommittees. The Community is a national collaboration, under the auspices of the Federal Advisory Committee Act that will provide advice on national standards and health IT policy. The Community will make recommendations to the federal government on how to make health records digital and interoperable, and on how to assure that the privacy and security of those records are protected. The first Community meeting was held in October 2005.

DoD and VA also are lead partners in developing the Federal Health Architecture (FHA). FHA is transitioning to be the Federal voice at the national level, aligning with the President's health IT agenda. FHA is guided by its vision to create "a Federal health IT environment that is interoperable with the private sector and supports the President's health IT plan to enable better care, increased efficiency, and improved population health." FHA will leverage previous work and accomplishments as focus shifts to support the overarching goals of input, implementation and interoperability.

The Consolidated Health Informatics (CHI) activities have now been aligned with the National Health IT agenda and the work of the Health Information Technology Standards Panel (HITSP), under the authority of the Office of the National Coordinator for Health IT and the American Health Information Community. DoD and VA are the two lead partners for the CHI initiative, one of the 24 eGov initiatives supporting the President's Management Agenda. The goal of the CHI initiative is to establish health information

interoperability standards as the basis for electronic health data transfer in Federal health activities and projects. As federal entities use common standards, it will be easier to exchange appropriate health information. Aligning CHI with the HITSP process ensures that the efforts are advanced in the broad public-private process and have validity for federal and non-federal health care.

FHA's role in supporting the President's health IT plan will continue to evolve as the health IT needs of the public and private sectors become more intertwined. As the leading providers of federal healthcare, DoD and VA are important stakeholders, active participants, and strong supporters of the FHA and the President's health IT initiative. DoD anticipates that FHA efforts will contribute to improved patient safety and higher quality healthcare for our beneficiaries.

DoD/VA Information Sharing Initiatives

DoD and VA share health information today. The Departments continue to pursue enhancements to information management and technology initiatives to significantly improve the secure sharing of appropriate health information. These initiatives enhance health care delivery to beneficiaries and improve the continuity of care for those veterans who have served our country.

The Federal Health Information Exchange (FHIE) supports the monthly transfer of electronic health information from DoD to VA at the point of a Service member's separation. VA providers and benefits specialists access this data daily for use in the delivery of health care and claims adjudication. Data transferred includes laboratory and

radiology results; outpatient pharmacy data from military treatment facilities, retail network pharmacies, and DoD mail order pharmacy; allergy information; discharge summaries; admission, disposition, and transfer information; standard ambulatory data record and patient demographic information.

DoD has transferred health information for over 3.5 million unique patients to the FHIE repository. Over 2.8 million of these individuals have presented to the VA for care, treatment, or claim determination. The amount of data transferred continues to grow as health information on recently separated Service members is extracted and transferred to the VA . FHIE is compliant with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations.

Building on that capability, DoD is now also transferring data for VA patients being treated in DoD facilities under local sharing agreements. Over 1.4 million messages (i.e., laboratory results, radiology, pharmacy, and standard ambulatory data records) have been transmitted on VA patients treated in DoD facilities. The transfer of data is vital in facilitating a beneficiary's transition from active duty to veteran status. The collaboration of sharing information between DoD and VA is necessary to strengthen the common mission shared by the DoD and VA clinicians.

The Bidirectional Health Information Exchange (BHIE) enables the real-time sharing of allergy, outpatient pharmacy, demographic, laboratory and radiology data between DoD BHIE sites and all VA Treatment Facilities for patients treated in both DoD and VA. BHIE is operational at the following DoD locations: Madigan Army Medical Center, William Beaumont Army Medical Center, Eisenhower Army Medical Center,

Naval Hospital Great Lakes, Naval Medical Center San Diego, the National Capital Area, Michael O'Callaghan Federal Hospital, Landstuhl Regional Medical Center, Tripler Army Medical Center, Womack Army Medical Center, David Grant Medical Center, Brooke Army Medical Center, Wilford Hall Medical Center, and Bassett Army Community Hospital. Site selection was based on support to returning members of Operation Enduring Freedom and Operation Iraqi Freedom, number of visits for VA beneficiaries treated in DoD facilities, current FHIE usage, number and types of DoD medical treatment facilities, local sharing agreements, retiree population, and local site interest. Deployment to additional DoD sites is planned in FiscalYear 2006.

DoD recognizes the VA requirement for inpatient documentation, particularly for severely wounded and injured Service members being transferred to VA for care. The Clinical Information System (CIS) is a commercial off-the-shelf product used at several DoD facilities that provide inpatient care. Key inpatient documentation such as the discharge summary, operative report, and inpatient consultations are stored in the CIS. DoD has begun the work necessary to extract these documents and make them available to be viewed by VA for patients that have transferred to VA for care. The Department will build on the current BHIE capability to make this documentation available to VA in a manner compliant with the HIPAA privacy regulations. An early version of this capability is currently in use between Madigan Army Medical Center and the VA Puget Sound Health Care System as part of their health information sharing initiative as a Fiscal Year 2003 National Defense Authorization Act Demonstration Site.

Pre- and Post-Deployment Health Assessments are provided to service members as they leave and return from duty outside the U.S. This information is used to monitor the overall health condition of deployed troops, inform them of potential health risks, as well as maintain and improve the health of service members and veterans. DoD is sending electronic pre- and post-deployment health assessment information to the VA. The historical data extraction for separated Service members was completed in July 2005 resulting in approximately 400,000 pre- and post-deployment health assessments being sent to the FHIE data repository at the VA Austin Automation Center. Monthly transmission of electronic pre- and post-deployment health assessment data to the FHIE data repository began in September 2005 and has continued each month since then. In March 2006, the historical data extraction of pre- and post-deployment health assessments for the Reserve and National Guard members who were deployed and are now demobilized was completed and the data transferred to the FHIE data repository. Reserve and National Guard data is now included in the monthly transmissions. As of May 2006, more than 1.3 million pre- and post-deployment health assessment forms on over 560,000 individuals are available to VA. DoD plans to initiate activity to add post-deployment health reassessment information in late Fiscal Year 2006.

The Laboratory Data Sharing Initiative (LDSI) facilitates the electronic sharing of laboratory order entry and results retrieval between DoD, VA and commercial reference laboratories. The LDSI for laboratory chemistry tests is available for use throughout DoD, and actively being used daily between DoD and VA at several sites where one Department uses the other as a reference lab. Either Department may function as the

reference lab for the other with electronic orders and results retrieval depending on the local business case. LDSI is operational at several DoD/VA sites that use each other for laboratory services.

The DoD Clinical Data Repository/VA Health Data Repository (CHDR) will establish interoperability between DoD's Clinical Data Repository and VA's Health Data Repository. The Departments successfully tested the exchange of computable outpatient pharmacy and allergy data in a laboratory environment in September 2004. This test demonstrated the ability to do drug-drug and drug-allergy checking using outpatient pharmacy and allergy information from both Departments. DoD and VA are working on the ability to exchange outpatient pharmacy and medication allergy data on shared patients in the DoD Clinical Data Repository and the VA Health Data Repository in Fiscal Year 2006.

Security Efforts

The MHS Information Assurance Program ensures protection of DoD Sensitive Information by focusing on electronic, physical, and personnel security. DoD and MHS policies ensure that the MHS has implemented an effective program to protect information systems, medical data, and ensure that government and contractor personnel are receiving adequate, regular training commensurate with levels of responsibility. In accordance with DoD policy, the MHS conducts a rigorous assessment of electronic and physical security controls before accrediting a network or centrally managed information system that transmits, processes, stores or accesses DoD Sensitive Information and/or connects to a DoD network/system. A primary goal of the MHS Information Assurance

Program involves ensuring that its information systems are and remain in compliance with DoD security requirements. A rigorous Certification and Accreditation (C&A) process followed by annual evaluations continually evaluate threats, vulnerabilities and the actions that are taken to mitigate identified risks. The C&A assessment is a standardized repeatable process that analyzes information systems for security vulnerabilities and compliance with existing DoD requirements. The security requirements reviewed include upgrades or patch management, physical and software controls, and configuration of protection devices.

To protect the information shared between DoD and VA, DoD data is encrypted in transit via a MHS managed Virtual Private Network (VPN) device. The VPN device encrypts protected health information between each Military Treatment Facility and key business partners, including the VA. In compliance with the VA Information Technology Security Certification and Accreditation Process, the FHIE/BHIE framework has received full approval to operate. The Departments continue to make enhancements through several information management and technology products, to include the FHIE and BHIE. These products have significantly improved the secure sharing of appropriate health information.

Conclusion

Mr. Chairman and distinguished members of this Committee, I am proud of the collaborative efforts being made by the DoD, VA and HHS and how these efforts align with the President's Health Technology Plan. Much has been accomplished and the

ground work has been laid for even greater progress in the future. Our shared commitment to strong DoD and VA collaboration in the area of information technology places us in the forefront of interagency health information technology across the federal government.

I am firmly committed to the Departments' continued collaboration with VA and to safeguarding the information on those entrusted to our care. Our collaboration will continue to evolve to expand the appropriate sharing of health information as systems and data repositories mature and standards and processes are further defined and implemented. Securely exchanging health information between Departments will improve the quality of health care delivered, and will also establish a model for electronically exchanging medical records.

Thank you for the opportunity to highlight our continued progress.

PREPARED STATEMENT OF MICHAEL KUSSMAN, M.D., DEPUTY UNDER SECRETARY FOR HEALTH, U.S. DEPARTMENT OF VETERANS AFFAIRS

TESTIMONY
BEFORE THE SENATE HOMELAND SECURITY COMMITTEE

Subcommittee on Federal Financial Management, Government Information, and International Security

JUNE 22, 2006

Good afternoon, Chairman Coburn, Ranking Member Carper, and members of the Subcommittee. On behalf of the Department of Veterans Affairs (VA), I am pleased to take this opportunity to discuss the comprehensive electronic medical record used by VA to provide world-class medical care and support to our veterans. I also am pleased to discuss the significant progress VA has made toward the development of secure, interoperable health technologies that support health data sharing with the Department of Defense (DoD). VA and DoD are currently working closely together to ensure the seamless transition of medical services for our men and women returning from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). Not only do these technologies allow us to deliver world-class medical care where and when it is needed, but they also permit the secure transfer of supporting medical data in a manner that protects the personal health information of our beneficiaries.

VA and DoD also take very seriously the shared responsibility to protect data that are being transmitted electronically between Departments. As part of building our shared information technology infrastructure, VA and DoD entered into a comprehensive written Memorandum of Understanding on June 27, 2005, that explicitly defines the authorities and parameters of sharing sensitive health data. This agreement is signed by the key business leaders within both organizations, by the VA Under Secretary of Health and Under Secretary of Benefits, the DoD Assistant Secretary of Defense for Health Affairs and the Principal Deputy Under Secretary of Defense for Personnel and Readiness. VA and DoD take great care to ensure that written agreements governing the use of these sensitive health data also are executed between local VA and DoD sharing

partners at the facility level. VA and DoD have followed applicable privacy and data-sharing legal requirements in the implementation of data-sharing activities between the two Departments.

VA Information Technology

The Institute of Medicine's 1999 report, "To Err is Human," estimated that between 44,000 and 98,000 Americans die each year due to avoidable medical errors. Many more die or suffer permanent disabilities because of inappropriate or missed treatment in ambulatory care settings. In contrast, the care VA provides to its more than 5.3 million veteran patients is better, safer, and more consistent. The primary reason for this is the Computerized Patient Record System (CPRS), which has been recognized by health care information technology experts as the most comprehensive Electronic Health Record (EHR) in use anywhere.

Please allow me to provide you with some background about the CPRS. In 1982, VA committed to build an electronic health care architecture called the Decentralized Hospital Computer Program (DHCP) that would easily integrate software applications into a complete hospital information system.

By 1990, VA had upgraded the computer capacity of all its medical facilities and implemented software nationwide that could provide the information infrastructure for an integrated health care delivery system. Using programs such as DHCP, VA promoted the use of new and emerging technologies to improve services and to support rapidly growing requirements for faster and more efficient access to clinical data by authorized VA users.

By 1996, DHCP had grown significantly in complexity and capability, and was re-named the Veterans Health Information Systems and Technology Architecture (VistA). Enhanced over the years, VistA today supports day-to-day operations in all VA hospitals, outpatient clinics, nursing homes and other facilities—a total of more than 1,400 points of care across the nation. As a measure of its widespread use, VA reached a milestone recently when VA health

care providers recorded the one billionth vital sign measurement (e.g., blood pressure, pulse, temperature) in VistA on April 19 of this year.

Today, VistA provides rapid access to patient data so clinicians can make informed health care decisions based on an abundant set of narrative clinical information. Through VistA, clinicians can easily access clinic and inpatient progress notes, consultation reports, history and physical examinations and discharge summaries. They can pull up operative reports, radiology and procedure reports (with associated diagnostic interpretations), laboratory results, medication profiles, physician orders, clinical problem summaries, vital signs and other measurements. They can also access clinical images and scanned documents. All this information is readily available in a consolidated information display that clinicians can view on computers anywhere in VA. This information is available at all VA sites of care, regardless of the facility where the information was originally collected and documented in VistA.

Another benefit of VistA is that it helps prevent unnecessary medical tests. In health care settings outside of VA, patients are often subjected to duplicate tests, simply because the results can't be located quickly enough. In fact, outside of VA, approximately 20 percent of laboratory tests are ordered because previous studies are not available. In VA, however, these prior test results are readily available and easy to locate and use, thanks to VistA. Similarly, VistA helps clinicians avoid repeating unsuccessful courses of treatment because it provides the clinicians with easy access to information about past clinical interventions and associated outcomes.

Through VistA, clinicians can easily consult evidence-based guidelines for medical care. VistA includes tools to encode guidelines and to screen for guideline-directed recommendations that should be considered during clinical encounters. Through clinical reminders—or "prompts"—in CPRS, VA can electronically implement evidenced-based guidelines for care delivery to ensure patients receive care according to the best practices. As a result, health care entities that define standards of patient care say that VA has achieved high rates of compliance with practice recommendations.

VistA's decision support tools help clinicians avoid ordering clinical interventions that would be potentially hazardous to the patient. This includes medications that might cause drug-allergy and drug-drug interactions. VistA alerts physicians, nurse practitioners, and physician assistants about these potential problems in real time, giving clinicians the opportunity to consider alternative treatments. The decision support system (DSS) provides accessible information that supports and improves the effectiveness of decision making and promotes managerial and clinical accountability, which optimizes efficiency and effectiveness.

VistA's computerized physician order entry (CPOE) and barcode-assisted medication administration (BCMA) systems have largely eliminated transcription and medication administration errors. In addition, through electronic communication of orders to pharmacy staff, patients receive prescribed medications rapidly compared to health care environments that rely on paper-based charting tools and fax-based communications. The BCMA approach is regarded as a "best of breed" approach to health care delivery.

VA is proud of its leadership role in health information technology, but we are never satisfied with the status quo. VA is now working to incrementally enhance and supplement the current capabilities of VistA to provide increased flexibility, more sophisticated analytical tools, and support for seamless data sharing among providers both inside and outside VA.

Given the success of VistA, some people have asked why we are changing it. The short answer is that it enables VA to capture the advances of new and emerging health care technology and to translate those into improved care for veterans ... whose service to our country has earned them our very best.

Constant change is the nature of health care. The current VistA system has served us well through decades of transformation in health care, but VA has outgrown its facility-centric Information Technology (IT) architecture. HealtheVet – the next generation of VistA – will give us a more flexible, person-centric architecture, so that we can better support integrated ambulatory care, home-based health care, and home telehealth. By increasing system capacity and

communications speed, it will allow us to improve system response time. And the next generation of VistA also will allow us to maintain continuity of operations in the event of a disaster.

HealtheVet will strengthen VistA's existing privacy and security protections by providing features such as enhanced role-based access. Role-based access will allow us to limit access to information based on the user's identity, location and job function, for example. We will also strengthen our ability to audit exactly who looks at what information and at what time.

As the next generation of VistA matures and is deployed, VA will continue in its leadership role of providing a state-of-the-art EHR that enables our clinicians to continue to provide world-class health care to the nation's veterans. And just as VA's use of health information technology has transformed the way we treat veterans, we believe these same tools should be made available to providers in rural and underserved communities. Therefore, we plan to keep the newly developed software in the public domain so that it will be available to other Federal agencies and providers in those target areas. The new architecture will also support more robust sharing of patient data with our partners in the Department of Defense and with health care providers in the private sector. This is an advance we fully support.

At present, VA and DoD patients benefit from our valuable and extensive collaboration with the Department of Defense to allow sharing of health information between the two organizations.

VA/DoD Information Sharing Initiatives

VA and DoD efforts to achieve interoperable health technologies are guided by the DoD/VA Joint Electronic Health Records Interoperability (JEHRI) Plan. This plan consists of a series of progressive, related data exchange initiatives that provide VA and DoD with a comprehensive health data sharing strategy. The plan is closely aligned and dependent upon parallel developments in the health data standards industry, so that as standards and technologies mature, interoperability will increase. The DoD/VA Joint Executive Council, co-

chaired by the VA Deputy Secretary and the DoD Under Secretary of Defense for Personnel and Readiness, provides executive oversight of the Plan. The DoD/VA Health Executive Council, which is co-chaired by the VA's Under Secretary for Health and the DoD Assistant Secretary of Defense for Health Affairs, is responsible for implementation of the plan.

Implementation of the JEHRI Plan began in 2002 when we achieved the successful one-way transmission of electronic medical records from DoD to VA. That effort, known as the Federal Health Information Exchange (FHIE), has supported the secure transmission of DoD electronic medical records to VA for more than 3.5 million separated Service men and women. FHIE records are viewable by Veterans Health Administration (VHA) clinicians treating veterans at VA hospitals and clinics. These same records are also available for viewing by the Veterans Benefits Administration (VBA) claims examiners who access FHIE data through an interface with the VBA Compensation and Pension Records Interchange (CAPRI).

FHIE allows our clinicians and claims examiners to view all pertinent historical electronic information from DoD's legacy system, the Composite Health Care System. These data include outpatient pharmacy data, allergy information, laboratory results, consults, admission, disposition and transfer information, and medical diagnostic coding data.

Following the success of FHIE, in 2004 VA developed the capability to support the real-time bidirectional exchange of electronic medical records between DoD and VA using the Bidirectional Health Information Exchange (BHIE). BHIE builds upon the success of FHIE and delivers readable text data between VA and DoD medical facilities where patients we both treat receive care. BHIE expands our access to medical data and allows VA and DoD to match patient identities for active DoD military service members and their dependents with their electronic health records at VA facilities, when needed. BHIE also supports the real-time bidirectional exchange of outpatient pharmacy data, anatomic pathology/surgical reports, cytology results, microbiology results,

chemistry and hematology laboratory results, laboratory order information, radiology text reports and food and drug allergy information.

BHIE data are available to DoD from every VA medical facility. DoD is currently implementing BHIE across selected sites and, thus far, has completed implementation at 14 major DoD sites. These sites include the Walter Reed Army Medical Center and the Bethesda National Naval Medical Center in the National Capital Area, the Landstuhl Regional Medical Center in Germany, and the Naval Medical Center in San Diego. VA is also working closely with DoD to expand the number of DoD military treatment facilities where BHIE is implemented and to increase the scope of data available for sharing between DoD and VA.

As I'm sure you are aware, DoD has modernized its information system and is migrating to AHLTA just as VA is migrating to HealtheVet. Pursuant to the JEHRI Plan that I discussed earlier, VA and DoD will soon implement the next phase of JEHRI that supports electronic data exchange between VistA and AHLTA. Both of these next-generation systems will rely on data repositories that use standardized data to ensure that health information is available across each enterprise, where and when it is needed.

Whereas the current data sharing initiatives FHIE and BHIE permit VA and DoD medical facilities to share text-viewable data from legacy systems, the next phase of JEHRI provides a strategy to share computable data between data repositories. This will enable decision support actions, such as drug-drug and drug-allergy checking between systems. This next phase of JEHRI, known as "CHDR", provides for VA and DoD to develop an interface between the DoD Clinical Data Repository (CDR) of DoD's AHLTA system and the VA Health Data Repository (HDR) of the next generation VistA system. The good news is that CHDR capability was operational in a laboratory test environment in September 2004. We have since been working on developing a production-phase CHDR and are preparing to test CHDR between the William Beaumont Army Medical Center and the El Paso VA Healthcare System in El Paso, Texas, no later than July 2006.

In addition to FHIE, BHIE and CHDR, VA and DoD have successfully developed a number of other applications that support information sharing and improve the way both Departments care for beneficiaries. For example, the jointly developed Laboratory Data Sharing Interoperability (LDSI) software permits VA and DoD to serve as reference laboratories for one another at locations where VA and DoD use each other's facilities to order and conduct chemistry laboratory tests and results reporting. The software is now operational at several locations where DoD and VA provide laboratory support to one another, and it is available to all sites where VA and DoD serve as reference lab facilities for one another and where the business case justifies its use.

Although significant progress has been made, VA and DoD continue to work closely together to increase the amount and type of health data being shared. DoD currently has access to VA inpatient data through the existing interface with VistA. The Departments have joined forces to provide VA the ability to access DoD electronic inpatient data that are collected and stored through the DoD Clinical Information System. The Departments also are working together as VA modernizes its existing imaging solution and DoD explores acquisition of new imaging technology. The Departments are actively exploring a collaborative imaging solution that will use VA technology to support shared access to images, such as radiological studies, in both DoD and VA facilities.

Collaboration on Standards

The bidirectional exchange of electronic health data between different health information systems is a monumental accomplishment. Moving from text-based data to computable data is even more challenging and complex. This work is dependent upon the adoption and implementation of health data and communication standards. VA and DoD are breaking new ground in this area and remain at the forefront of health data collaboration and exchange activities within the Federal government. Together, VHA and Military Health System personnel staff multiple workgroups and standards development organizations charged with identifying and adopting standards to support interoperable health

technologies. We have previously given Congressional testimony about our joint work as partners on the Federal Health Architecture Consolidated Health Informatics (FHA/CHI) initiative, one of the 24 e-gov initiatives on the President's Management Agenda. The Department of Health and Human Services (HHS) has sponsored the FHA/CHI initiative, and VA and DoD have served as lead partners.

The purpose of FHA/CHI has been to promote interoperable health information technology within the Federal government, and to facilitate the informed and collaborative Federal identification and adoption of health information standards. Increasingly, government-wide initiatives such as FHA/CHI reside within the HHS Office of the National Coordinator for Health Information Technology and work closely with the American Health Information Community (AHIC), which serves as a public forum for discussing and providing HHS with advice on advancing the implementation of health information technology. VA is an active AHIC participant and will continue to play a leading role in the national-level discussions on health data standards adoption and implementation.

Privacy and Security Protections

I now wish to discuss briefly the existing protections that ensure that our DoD/VA health data exchange initiatives are secure and fully protect the personal health information of our veterans and military beneficiaries. Since 2002, when we first implemented FHIE, there has been no known breach in health data security, despite the large number of veterans covered and the substantial amount of data transferred.

FHIE and BHIE are in full compliance with the Federal Information Security Management Act (FISMA) and the Office of Management and Budget's government-wide information security and privacy policies, as well as VA's Office of Cyber Security policies and DoD Information Assurance polices. These projects also comply with the privacy and security requirements of the Privacy Act and the Health Insurance Portability and Accountability Act (HIPAA) meant to

protect the unauthorized use or transmission of personal health information. To ensure the highest level of protection for these clinical data, we employ a double-encryption method using a hardware-based Virtual Private Network (VPN). After having passed an initial and subsequent review of security protections, the FHIE/BHIE framework received a VA-issued renewal of the Authority to Operate in December 2005. An "Authority to Operate" results from a comprehensive process[1] that includes security planning, security control implementation and testing. DoD information security officers concurred with and accepted this rigorous review. As sharing partners, VA and DoD take very seriously our duty to protect the sensitive health data entrusted to us in the course of caring for veterans and military beneficiaries. FHIE and BHIE are award-winning programs, with BHIE having been recently recognized as finalist for the prestigious 2006 Excellence.gov award by the American Council of Technology. This award recognizes innovation and best practices among interagency collaborations.

Lessons Learned

Prior to closing, I want to briefly discuss a few important lessons learned by VA throughout its implementation of VistA and successful data exchange initiatives with DoD. First, our health information technology is not about the technology, but it is about improving the quality of care and health outcomes for veterans. Therefore, technology must be woven into the very fabric of the business processes for delivering care and treatment – as we have succeeded in doing in VA today. The technology we've developed and implemented allows VA clinicians to use software tools to analyze health data in real-time; target relevant information quickly; compare results, and use built-in order checks and reminders to support point-of-care clinical decision-making. These capabilities promote safer, more complete and more systematic care.

Second, with respect to VA data exchange with DoD or any partner, the type of data to be shared (e.g., information on clinical care and patient safety)

[1] National Institutes of Standards and Technology Special Publication 800-37

should determine the scope and extent of the data exchange. VA and DoD continue to work together to share data where and when it makes sense to do so.

VA and DoD have also learned that a joint comprehensive approach is needed to ensure success. For example, the DoD/VA Joint EHR Interoperability Plan sets forth shared objectives, documents a project management plan that has aggressive but achievable milestones with progressively increasing capabilities, and is managed at the highest levels of both Departments. Also as part of JEHRI, VA and DoD provide joint leadership and guidance in key standards development organizations and initiatives such as FHA/CHI and AHIC.

Because an estimated 40 percent of the veterans we treat each year receive additional care outside of VA, we are committed to the growth of interoperable technologies to support health information sharing across all settings where veterans receive care, both public and private. The identification and adoption of mature health data standards is a necessary component to continued success in this area.

Additionally, we have learned to build systems, managed through a rigorous, efficient change control process, that are flexible and capable of implementing significant new capabilities to support new requirements as they arise. For example, our FHIE infrastructure was quickly modified to implement BHIE. On a more recent occasion, that same infrastructure was extended to provide the capability to access Pre- and Post-Deployment Health Assessment data on returning OEF and OIF combat veterans, as well as demobilized Reserve and National Guard members. These enhancements were achieved with only a marginal increase above our original investment.

Conclusion

VA is fully committed to ongoing collaboration with DoD and to further promoting world-class health technologies to improve health care for veterans. My colleagues and I will be pleased to answer any questions that you or other members of the Committee might have.

QUESTIONS AND RESPONSES FOR THE RECORD FROM LINDA D. KOONTZ

United States Government Accountability Office
Washington, DC 20548

July 31, 2006

The Honorable Tom Coburn, M.D.
Chairman, Subcommittee on Federal Financial Management,
Government Information, and International Security
Committee on Homeland Security and Governmental Affairs
U.S. Senate

Subject: *Subcommittee Post-Hearing Questions Concerning Efforts by the Departments of Veterans Affairs and Defense to Exchange Electronic Medical Information and Veterans Affairs' Efforts on the Veterans Service Network (VETSNET)*

This letter responds to your request of July 10, 2006, that we provide the answers to questions relating to our testimony of June 22, 2006.[1] At that hearing, we discussed efforts by the Departments of Veterans Affairs (VA) and Defense (DOD) to share electronic medical information, as well as VA's development of the Veterans Service Network (VETSNET), a modernized system intended to support benefits payment processes. Your questions, along with our responses, follow:

1. *Do you expect VA and DOD to successfully complete their new systems (AHLTA and HealtheVet) and the interface between their data repositories within the projected time frame?*

Given delays in development of the interface and the new health information systems, VA and DOD may be challenged in completing these initiatives within the projected time frame.

- The departments have been developing an interface to link their two new data repositories; this interface, known as CHDR (a name derived from the abbreviations for DOD's Clinical Data Repository—CDR—and VA's Health Data Repository—HDR), is currently in pilot testing at a joint VA/DOD facility in El Paso, Texas. According to department officials and project documentation, the original deadline for the exchange of selected health information through CHDR was October 2005. However, by September 2005, this deadline had slipped to February 2006 and later slipped to July 2006. According to VA officials,

[1] GAO, *Information Technology: VA and DOD Face Challenges in Completing Key Efforts*, GAO-06-905T (Washington, D.C.: June 22, 2006).

reasons for the delays included the complexity of implementing standards to enable the exchange of computable outpatient pharmacy information, which was far greater than originally anticipated. If successful, the pilot test of CHDR will mark the first time that VA and DOD have exchanged computable information between their data repositories. However, even after the departments successfully establish the interface, much work remains to populate both repositories with all the medical information they wish to exchange.

- The departments have experienced delays in the completion of VA's and DOD's next-generation health information systems, HealtheVet VistA and AHLTA. Regarding HealtheVet VistA, according to VA officials, the department's work on this initiative has been slowed by funding constraints. As a result, VA has had to reevaluate its plans for the project, which may decrease its chances of completing the project by the 2012 projected completion date. Regarding AHLTA, we recently reported that DOD expects to complete deployment of all capabilities by 2011—3 years later than planned. In addition, according to a recent DOD Inspector General report,[2] completion of the next increment of AHLTA remains at high risk.

2. *How will computable information improve the care received by VA and DOD patients?*

According to the Institute of Medicine,[3] computable electronic health records will help reduce many of the errors that plague the health care industry. Although many of these errors are caught in time to prevent serious harm, errors pose a significant risk to patient safety. The Institute of Medicine characterized significant errors as including both errors of commission—such as prescription of drugs with potential interaction risks—and errors of omission— such as failure to prescribe a medication that would benefit a patient. Computable information is in a format that a computer application can act on: for example, to provide alerts to clinicians (of such things as drug allergies) or to plot graphs of changes in vital signs such as blood pressure. In addition to catching errors, computer alerts also have the potential to help identify abnormal results and lead to faster treatment. Computer alerts may also reduce the occurrence of adverse events. Systems that can automatically provide alerts and clinical reminders can enhance preventative practices and improve overall quality of patient care. According to VA and DOD, the availability of shared computable medical data will contribute significantly to patient safety and the usefulness of electronic medical records.

3. *Are you satisfied that a detailed project plan will decrease the risks that VA and DOD face in developing and implementing the interface?*

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[2] Department of Defense, Office of Inspector General, *Information Technology Management: Acquisition of the Armed Forces Health Longitudinal Technology Application*, D-2006-089 (Arlington, VA: May 18, 2006).

[3] Institute of Medicine, *Patient Safety: Achieving a New Standard for Care* (Washington, D.C.:2004) and *Key Capabilities of an Electronic Health Record System* (Washington, D.C.: 2003).

A detailed project plan that provides sufficient specificity defining the technical and managerial processes necessary to satisfy requirements and establishes accountability for all of the tasks to be performed in developing, testing, and implementing the interface will decrease the risks that VA and DOD face. As we have noted in a previous report,[4] without a project management plan, VA and DOD lack assurance that they can successfully develop and implement an electronic interface and the associated capability for exchanging health information within the time frames that they have established.

The departments have missed several deadlines with regard to achieving an electronic interface between their data repositories. Having a project management plan of sufficient specificity that outlines their overall efforts beyond building the interface may help the departments avoid further delays and increase the chances that they produce health systems that meet their expectations.

4. *Based on GAO's previous work and the history associated with VETSNET, do you think that VA will ever successfully complete the project?*

As noted in our testimony,[5] until VBA develops an integrated project plan addressing the long-standing management weaknesses that we and others have identified, there is considerable risk that progress will continue to be discouraging. A plan is also needed that encompasses all activities necessary to transition from the aging Benefits Delivery Network to VETSNET. Until such plans are formulated, with management controls to ensure clear accountability, measure performance, and otherwise effectively control and evaluate the program, it is uncertain when and at what costs VETSNET will be delivered.

VBA reports that it is now developing a new integrated project plan that is to include realistic milestones. However, this plan is to address compensation and pension benefits only. According to VBA officials, after this new integrated project plan is completed, it will begin developing plans to modernize the systems used for educational benefits and vocational rehabilitation and employment benefits. These systems must be included within its goal to modernize or replace the Benefits Delivery Network. VBA has not yet developed plans for making the transition to VETSNET and ending dependence on the Benefits Delivery Network. As a result, much work remains to accomplish the original comprehensive goal of modernizing the Benefits Delivery Network that VBA currently depends on to pay veterans' benefits. Consequently, without specific, realistic plans to address these matters, it is likely that underlying management and organizational problems will continue to hamper any new or revised effort.

These risks, however, can be reduced, if VBA develops adequate plans, makes concerted monitoring and control efforts, and gives VETNSET the management attention and evaluation needed to ensure that deviations from plans are reduced, prevented, or quickly detected and corrected. Such actions should increase the likelihood that VA will successfully complete the project.

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[4] GAO, *Computer-Based Patient Records: VA and DOD Efforts to Exchange Health Data Could Benefit from Improved Planning and Project Management*, GAO-04-687 (Washington, D.C.: June 7, 2004).
[5] GAO-06-905T.

5. *In your view, what are the underlying reasons for VA's lack of success with VETSNET?*

As noted in our testimony,[6] the VETSNET initiative has been hampered by project management issues and immature software development capabilities. The 2005 Carnegie Mellon Software Engineering Institute (SEI) technical assessment of VETSNET found that root causes such as the program's underlying management and organizational problems required attention regardless of the particular course VA chose for the system. Some examples noted in the SEI independent technical assessment were the need to set realistic milestones and establish an effective requirements process and program measurements to assess progress. According to SEI, different organizational components had independent schedules and priorities, which caused confusion and deprived the department of a program perspective. These observations are consistent with our long-standing concerns regarding fundamental deficiencies in VBA's management of the project.

In addition, we have reported that an additional underlying factor that may affect the VETSNET program is the very nature of the VA disability benefits[7]. More specifically, more than 200 laws govern VA's disability compensation program, and numerous court decisions have affected how compensation is determined. As a result, compensation decisions are based on elaborate procedures reflecting this complex history, which affects the number of claims VA receives and decides and the mechanisms used, including automated systems. Consequently, any effort, such as VETSNET, to modernize the system administering the disability claims processing function must effectively accommodate this complexity.

6. *Both the DOD and the VA have begun new and costly initiatives in health IT in 2004–2005, for which both agencies have taken some steps to respond to GAO's earlier critiques and recommendations. GAO found in a September 2005 report that both agencies had not yet developed a clearly defined project management plan to guide their efforts; had not yet fully populated the repositories that will store the data for planned health systems; and had experienced significant delays in efforts to begin even a limited data exchange. In addition, GAO found the agencies "severely challenged in their pursuit of the longer term objective—providing a virtual medical record in which data are computable... and in a format that the health information application can act on." What are the most recent short- and long-term goals that GAO has been made aware of by the agencies to exchange "computable" medical information?*

In the short term, as discussed earlier, VA and DOD are pilot testing CHDR at their joint facility in El Paso. If the pilot is successful, a functioning CHDR interface at El Paso will allow them to exchange limited data, including outpatient pharmacy data, medication allergy information, and patient demographic information on shared patients at that location. According to the VA/DOD Director of Health IT Sharing,

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[6] GAO-06-905T.

[7] GAO, *Veterans' Disability Benefits: Claims Processing Problems Persist and Major Performance Improvements May Be Difficult*, GAO-05-749T (Washington, D.C.: May 26, 2005).

once the interface is successfully tested, the departments will have the capability to expand to all VA sites and to all DOD sites that have implemented the first increment of AHLTA. DOD officials have stated that they plan to have the first increment of AHLTA in place at all military treatment facilities by the end of 2006. According to the Director, at that time, the departments will be able to exchange computable outpatient pharmacy information on shared patients at all their facilities. They have begun work to exchange information on laboratory results.

In the longer term, under the HealthePeople (Federal) initiative,[8] the departments envision that, on entering military service, each service member would have a virtual medical record created and stored in DOD's Clinical Data Repository. The record would be updated as he or she received medical care. When an individual separated from active duty and, if eligible, sought medical care at a VA facility, a VA medical record would then be created for that patient, which would be stored in VA's Health Data Repository. On viewing the medical record, the VA clinician would be provided with the ability to access the patient's clinical information residing in DOD's repository. In the same manner, when a veteran sought medical care at a military treatment facility, the attending DOD clinician would be provided with the ability to access to the health information in VA's repository. According to the departments, this planned approach would make virtual medical records displaying all available patient health information from the two repositories accessible to both departments' clinicians.

7. *GAO has reported that although the agencies have taken action on many of their recommendations, the CHDR effort still lacks a sufficiently detailed project plan. Is it expected that there will be separate DOD and VA management plans, as well as a combined DOD-VA comprehensive plan? Has GAO been notified of the existence of such plans?*

For efforts in which multiple agencies are involved, each may have a separate management plan to govern its own efforts, but we have emphasized the need to have an overall integrated plan among agencies, especially for complex projects. We have not been notified by either department that it has a separate individual management plan for the CHDR effort and we are not aware that such plans exist.

8. *The success of VA and DOD efforts to exchange medical information will depend, at least in part, on the departments' abilities to communicate and collaborate effectively. What mechanisms is GAO aware of that DOD and VA have put in place to ensure that this happens?*

VA and DOD have a joint strategic plan that guides their collaboration and communication to achieve shared goals through mutual support of common and unique mission requirements. Within the framework of the plan, they have set up a Joint Executive Council (JEC) and a Health Executive Council (HEC) to provide oversight of the interaction between the two agencies.

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[8]This initiative is premised on the departments' development of a common health information architecture comprising standardized data, communications, security, and high-performance health information systems. The joint effort is expected to result in the secured sharing of health data between the new systems that each department is currently developing and beginning to implement.

Established in February 2002, JEC was created to enhance VA and DOD collaboration, ensure the efficient use of federal resources, remove barriers and address challenges that impede collaborative efforts, assert and support mutually beneficial opportunities to improve business practices, and develop a joint strategic planning process to guide the direction of sharing activities. This council is co-chaired by the Deputy Secretary of Veterans Affairs and the Under Secretary of Defense for Personnel and Readiness. Membership consists of senior leaders from both departments (including, from VA, the Under Secretary for Benefits and the Under Secretary for Health, and from DOD, the Principal Deputy Under Secretary of Defense for Personnel and Readiness and the Assistant Secretary for Health Affairs). JEC's primary responsibility is to set strategic priorities for HEC and three other interagency bodies,[9] monitor the development and implementation of the Joint Strategic Plan, and ensure that accountability is incorporated into all joint initiatives.

In August 2003, JEC directed HEC to oversee the cooperative efforts of each department's health care organizations. HEC is co-chaired by the VA Under Secretary for Health and the Assistant Secretary of Defense (Health Affairs) and meets on a bimonthly basis. To institutionalize VA and DOD sharing and collaboration through the efficient use of health services and resources, HEC has organized itself into 11 workgroups, each of which has been charged to focus on specific high-priority areas of national interest. Areas that workgroups are addressing include joint facility utilization and resource sharing, information management/information technology, patient safety, and pharmacy.

In addition to these councils, at the project level, the departments have shared responsibility. Responding to our recommendation,[10] the departments implemented a joint project management structure for CHDR. The joint project management structure consists of a Program Manager from VA and a Deputy Program Manager from DOD, who provide day-to-day guidance for the initiative.

9. *Based on extensive years of reporting on dual DOD and VA electronic health data exchanges, are there other outstanding repeat recommendations made by the GAO to the agencies that have not been followed, particularly in the areas of performance management?*

VA and DOD have not yet completed implementation of our recommendation to create a detailed project plan for developing and implementing CHDR. Since we began reporting on VA's and DOD's efforts to exchange electronic health data, we have issued three reports with recommendations aimed at encouraging progress to

[9] JEC has two interagency councils and two interagency committees to facilitate collaboration and sharing opportunities: (1) HEC, (2) the Benefits Executive Council, (3) the Joint Strategic Planning Committee, and (4) the Construction Planning Committee.
[10] We recommended in 2004 that the departments establish a project management structure to provide day-to-day guidance of and accountability for their investments in and implementation of the interface.

achieve a two-way exchange of health information between VA and DOD.[11] The departments have implemented the remaining recommendations from these reports which focus on strengthening the management and oversight of electronic health data exchange projects.

10. Are you aware of efforts being made by DOD and VA to develop performance measures and evaluation plans necessary to determine the progress of each of the agencies' health care resource-sharing plans, projects, and goals?

Earlier this year, we reported that while the departments' joint strategic plan identifies performance measures, they are not useful for evaluating how well the departments are achieving their health care resource-sharing goals. For example, the plan mentions 30 measures that could be used to assess the departments' progress in sharing health care resources, some of which may provide a useful snapshot of information, but do not provide long-term or longitudinal information for evaluating the usefulness of specific activities.

Accordingly, we recommended that to further advance health care resource sharing within VA and DOD, the departments should develop performance measures that would be useful for determining the progress of their health care resource-sharing goals. The departments agreed with this recommendation and stated that they have issued the VA/DOD Joint Executive Council Strategic Plan, Fiscal Years 2006-2008 (signed by VA and DOD on January 26, 2006)—a plan that revises and updates the original VA/DOD Joint Strategic Plan, and contains performance measures that demonstrate measurable progress relative to specific strategic milestones. However, we do not agree that the January 2006 plan fully addresses the concerns raised in the report, and reiterate our recommendation that useful measures be developed that provide specifics regarding time frames, implementation strategies, and the type of information that will be reported to program managers.

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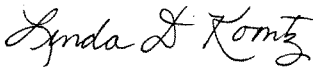
[11] GAO, *Computer-Based Patient Records: VA and DOD Efforts to Exchange Health Data Could Benefit from Improved Planning and Project Management*, GAO-04-687 (Washington, D.C.: June 7, 2004); *Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing*, GAO-01-459 (Washington, D.C.: Apr. 30, 2001); and *Veterans Affairs: Sustained Management Attention Is Key to Achieving Information Technology Results*, GAO-02-703 (Washington, D.C.: June 12, 2002).

We are sending copies of this letter to the Secretary of Veterans Affairs and other interested parties. Should you or your offices have any questions on matters discussed in this letter, please contact me at (202) 512-6240 or by e-mail at koontzl@gao.gov. Key contributors to this correspondence include Barbara S. Oliver, Martin Katz, Eric Trout, Robert Williams, Jr., and Charles Youman.

Sincerely yours,



Linda D. Koontz
Director, Information Management Issues

(310777)

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 1

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: DoD has received low information security scores from the House Government Reform Committee's annual report card on government computer security efforts from 2001 - 2005. What is being done to fix low computer security grades?

Answer: The Military Health System (MHS) pursues full compliance with the Federal Information Security Management Act (FISMA) for our health information, business operations, and physical assets. With this is mind, the MHS has taken the following actions to improve our computer security such as:

- Updated the MHS Information Assurance (IA) Policy Guidance and the MHS IA Implementation Guides and provided to the MHS community;
- Upgraded information assurance technology such as firewalls, intrusion detection systems, audit software, anti virus software;
- Continued to enhance the MHS Certification and Accreditation Process;
- Performed annual security audits on MHS information systems;
- Ensured timely compliance with the DoD IA Vulnerability Management program;
- Worked with the Defense Information Systems Agency Joint Task Force – Global Network Operations to ensure that computer network monitoring and defense in depth safeguards are in place;
- Used National Security Agency Blue Teams to analyze the computer network defense status of the MHS;

Additionally, the MHS is:

- 75% complete with our implementation of logon security through smart card technology and expects to be 100% complete by July 30, 2006;
- Developing strategies to implement the encryption of sensitive information at rest and in transit;
- Continually evaluates commercial and Federal IA best practices for implementation within the community;
- Implementing the DoD mandated IA Workforce Management Program to provide certified professionals to protect the MHS systems in compliance with FISMA.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 2

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The Quadrennial Defense Review (QDR), DoD's plan for transformation through 2015, was expected for release in early February – do you anticipate program management changes for DoD's HIT programs (or VA-shared programs)?

Answer: The Military Health System (MHS) Information Technology (IT) approved portfolio is aligned with current MHS QDR initiatives. The MHS representatives for each of the corresponding QDR initiatives have convened teams to develop detailed action plans, which will be used to determine MHS IT products and services needs. As these detailed action plans are completed, the MHS IT portfolio will be reevaluated in accordance with the MHS IT and MHS/VHA governance structures.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 3

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The DoD was expected to complete the deployment of the outpatient version of its Armed Forces Health Longitudinal Technology Application (AHLTA) by the end of this calendar year. Why has the name of the Composite Health Care System (CHCS) II initiative changed? Among its improvements, the modernized version will provide standardized data definitions – data can be entered once and repeated, shared and moved. Are the standards complete? Do you expect to be able to meet the deadline? Is there an in-patient component to the system?

Answer: AHLTA's roots go back to the CHCS, a DoD Electronic Health Record (EHR) system utilized only within individual Military Treatment Facilities (MTF). The system that followed, CHCS II, provided additional capabilities, including the ability to share data and medical information between MTFs. The decision to re-brand CHCS II, with AHLTA's subsequent unveiling, served to mark CHCS II's maturation into a next generation EHR and to underscore the system's transformational capabilities. After many years of investment, work and thoughtful effort, the DoD EHR system reached and passed a tipping point, and AHLTA is the result. It has literally transformed the way the military delivers healthcare in the 21st century.

The AHLTA EHR is "patient-centric," patient information from facilities around the world is gathered into a single, secure, durable record. The heart of AHLTA is the clinical data repository where the data contained in each comprehensive electronic health record is stored for each military health beneficiary, regardless of the location where care was received. AHLTA was designed to use structured documentation to collect patient health care information. Further, the data definitions were standardized or "normalized" and constitute the foundation which made this interoperability, centralized data storage and exchange of health information possible.

AHLTA use continues to grow at a significant pace. As of June 22, 2006, AHLTA has processed 22,634,151 outpatient encounters. AHLTA is currently processing an average of 86,000 patient encounters per workday (daily average for week of June 12 – 16, 2006). Worldwide deployment of Block 1 is expected to be completed by the end of calendar year 2006, at which point AHLTA will be available for over 9.2 million beneficiaries.

While in-patient order entry functions are currently accessed through AHLTA and provided by the legacy system CHCS, improvement in the ability to document in-patient care through AHLTA will be provided in a future block release.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 4

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Have data standards been set between the DoD and the VA to guide the exchange of health data in every cooperative project between the agencies? What standards have been developed to date, and what other Federal agencies have been involved in the process?

Answer: Yes. For the past three years, the DoD and VA have prepared a DoD/VA Joint Standards Profile that includes data representation and information standards to be used to guide the exchange of health data in every cooperative project between the agencies. DoD and VA have recently completed selection of terminology standards to guide the exchange of medication and allergy alert information between the DoD/VA dual-eligible patients. All of their work has been coordinated through the Federal Health Architecture's Consolidated Health Informatics Work Group, where all Federal agencies involved with healthcare data exchange have participated and reviewed the outputs. In relation to these Federal architecture efforts, DoD and VA have contributed their joint standards profile and Data Standards Implementation Guides for Digital Imaging and Communications in Medicine (DICOM) in support of imaging exchange.

List of Consolidated Health Informatics (CHI) data standards:

Clinical Domains with Standards Adopted in March 2003

1. Laboratory Results Names: Logical Observation Identifiers Names and Codes (LOINC®)
2. Messaging Standards: includes scheduling, medical record/image management, patient administration, observation reporting, financial management, patient care: Health Level 7 (HL7®)
3. Messaging Standards: includes retail pharmacy transactions National Council for Prescription Drug Programs (NCPDP) SCRIPT®
4. Messaging Standards: Connectivity: Institute of Electrical and Electronics Engineer (IEEE™) 1073
5. Messaging Standards include Image Information to Workstations: DICOM®

Clinical Domains with Standards Adopted in May 2004

6. Demographics (HL7®)
7. Lab Result Contents (Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT®))
8. Units (HL7®)
9. Immunizations (HL7®)
10. Medications (Federal Drug Terminologies, such as FDA Standards Manual, RxNorm, and

VA's National Drug File Reference Terminology)

11. A. Interventions/Procedures: Lab Test Order Names (LOINC®)
    B. Interventions/Procedures: Non-Lab (SNOMED CT®)
12. Anatomy (SNOMED CT® and National Cancer Institute (NCI) Thesaurus)
13. Diagnosis/Problem Lists (SNOMED CT®)
14. Nursing (SNOMED CT®)
15. Financial/Payment (HIPAA Transactions and Code Sets)
16. Genes (Human Genome Nomenclature – HUGN)
17. Clinical Encounters (HL7®)
18. Text-Based Reports (HL7® – Clinical Document Architecture)
19. Chemicals (Environmental Protection Agency's (EPA) Substance Registry System)
20. Disability (Standard in process; National Committee on Vital and Health Statistics (NCVHS) reviewing)

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 5

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: What is being done to develop performance measures and an evaluation plan necessary to determine the progress of VA's health care resource-sharing goals with the DoD?

Answer: The Joint Strategic Plan (JSP) for Fiscal Year 2006-2008 has recently been issued. It revised and updated the 2004 JSP and contains performance measures that demonstrate measurable progress relative to specific strategic milestones.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 6

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: What is the expected cost for complete rollout of Armed Forces Health Longitudinal Technology Application (AHLTA)? Is the deployment date for all major system capabilities expected for September 2008? How much has been spent on the system to date since development started in 1997? Do these costs include government personnel or operations and maintenance costs?

Answer: Current AHLTA life cycle cost estimates are as follows:

- Total life cycle acquisition costs, Fiscal Year (FY) 1997 to Full Operational Capability (FOC) = $1.2 billion

- Total implementation and start-up cost (FY 1997– FY 2006) = $783 million

Acquisition costs include research, development, test and evaluation, procurement and acquisition, and operations and maintenance used for the development, integration, initial procurement, and deployment of the system.

The current deployment date for all major system capabilities or FOC, including capability Blocks I through III, for AHLTA is September 2011.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 7

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The DoD has spent a considerable amount of money and time to develop and implement the first block of Armed Forces Health Longitudinal Technology Application (AHLTA). How firm is the estimated date for completion of this block and how much additional money will be required? What are the next steps and associated estimated costs?

Answer: The completion date of AHLTA Block I is on schedule for the end of calendar year 2006. At this time, we believe no additional money will be needed to finish Block I beyond what is currently allocated within the AHLTA budget. As of June 22, 2006, AHLTA Block I has been implemented at 115 of 138 planned Military Treatment Facility sites. The AHLTA implementation process is continually refined by the AHLTA Program Office in coordination with the Service medical departments to ensure implementation proceeds in a smooth, effective manner, maintaining user confidence in system performance.

The Military Health System is currently revising the AHLTA Acquisition Strategy, which may affect AHLTA Block II and Block III deployment schedules:

Block II: Spectacle Request Transmission System, which provides eyeglass ordering/management, will begin worldwide deployment in the First Quarter of Fiscal Year (FY) 2007. The Dental Charting and Documentation capability will begin Operational Test and Evaluation in the First Quarter of FY 2007, followed by a Full Deployment Decision at the end of the Second Quarter of FY 2007. The cost to complete the testing and deployment of Block II is currently estimated at just under $40 million.

Block III: The acquisition strategy and corresponding cost and schedule are under review. Block III currently includes the replacement of the ancillary functions of the legacy Composite Health Care System (Pharmacy, Laboratory, Anatomic Pathology, Radiology) and the addition of Inpatient Charting and Documentation and Occupational Health and Surveillance.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 8

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Is information for all active duty Service members to be included – National Guard? The Air Force?

Answer: Yes, all active duty Service members, including National Guard and Reserve Service members called to active duty, will have an electronic medical record in the Armed Forces Health Longitudinal Technology Application.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 9

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Has the National Guard always been included in the two-way data exchange Bidirectional Health Information Exchange (BHIE) system that allows for real-time interchange of medical data between DoD and VA facilities?

Answer: The electronic health information shared through the BHIE has always included National Guard and Reserve members who have enrolled for VA care and have been correlated with the VA Master Patient Index through BHIE.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 10

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: What is the DoD's role in the development of Health*e*People?

Answer: The DoD/VA Joint Electronic Health Records Interoperability Program is sometimes referred to as Health*e*People (Federal), particularly within VA. DoD has not been directly involved in VA's broader effort, HealthePeople. However, DoD participates in the Department of Health and Human Services' Office of the National Coordinator for Health Information Technology activities, including the American Health Information Community, the Health Information Technology Policy Council, the Health Information Technology Standards Panel, and other groups with a focus on government and private sector sharing of appropriate electronic health information.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 11

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: How far along is the development of the Clinical Data Repository/Healthy Data Repository (CHDR)? Where does it fit into the big picture goal for functional data exchanges between DoD and VA? Are there other applications for CHDR?

Answer: During the last week of June 2006, the VA and DoD began production testing of the CHDR interface in a live patient care environment using standardized, computable pharmacy and medication allergy data. Clinicians from the William Beaumont Army Medical Center, using the Armed Forces Health Longitudinal Technology Application, DoD's electronic health record system, and the El Paso VA Healthcare System, using VistA, the VA's electronic health record system, exchanged pharmacy and medication allergy data on patients who receive healthcare from both healthcare systems. The CHDR interface also supports the ability to conduct drug-drug and drug-allergy order checking for these patients using the pharmacy and allergy data from both Departments. Testing is scheduled to continue through July. CHDR represents the first demonstration of interoperability of pharmacy and medication allergy data in a patient care setting between the DoD Clinical Data Repository and the VA Health Data Repository. Once production testing is concluded, and any issues and problems that arise from use in El Paso are identified, evaluated, and addressed, the Departments will begin enterprise-wide implementation of this capability.

The Federal Health Information Exchange (FHIE), Bidirectional Health Information Exchange (BHIE), and CHDR are complimentary initiatives that each make unique contributions to the spectrum of DoD/VA health information sharing. FHIE is designed to provide historical data from DoD to VA. BHIE is designed to provide a real-time view of data for shared patients receiving care from both departments and CHDR is designed to provide computable data so that the electronic health record systems of DoD and VA can use the data from both departments to perform drug-drug interaction and drug-allergy checking.

FHIE enables the transfer of protected electronic health information from DoD to VA at the time of a Service member's separation. DoD transmits to VA on a monthly basis: laboratory results, radiology results, outpatient pharmacy data, allergy information, discharge summaries, consult reports, admission, disposition and transfer information, elements of the standard ambulatory data records, and demographic data on separated Service members. VA providers and benefits specialists access this data daily for use in the delivery of health care and claims adjudication. As of June 2006, DoD has transmitted messages to the FHIE data repository on more than 3.5 million unique retired or discharged Service members. This number grows as health information on recently separated Service members is extracted and transferred to VA.

BHIE enables the real-time, bidirectional transmittal and display of patient demographic data, outpatient pharmacy data, allergy information, radiology text reports, and laboratory results, including surgical pathology, cytology, microbiology, chemistry, and hematology. BHIE is available at all VA sites and is now operational at the following DoD locations:

- Madigan Army Medical Center (AMC), Tacoma, Washington
- William Beaumont AMC, El Paso, Texas
- Eisenhower AMC, Augusta, Georgia
- Great Lakes Naval Hospital, North Chicago, Illinois
- Naval Hospital Balboa, San Diego, California
- National Capital Area, Washington, District of Columbia
- Mike O'Callaghan Federal Hospital, Las Vegas, Nevada
- Landstuhl Regional Medical Center, Landstuhl, Germany
- Tripler AMC, Honolulu, Hawaii
- Womack AMC, Ft. Bragg, North Carolina
- David Grant Medical Center, Travis Air Force Base, California
- Brooke AMC, San Antonio, Texas
- Wilford Hall Medical Center, San Antonio, Texas
- Bassett Army Community Hospital, Fairbanks, Alaska

To further increase the availability of clinical information on a shared patient population, VA and DoD are working together to further leverage the BHIE functionality to allow bidirectional access to inpatient discharge summaries. Testing of this functionality will begin in the Fourth Quarter of Fiscal Year (FY) 2006. Testing will occur at Madigan AMC and VA Puget Sound with access to inpatient documentation from Madigan AMC's Clinical Information System and VA's VistA system. Planning is in progress for the further deployment of this functionality to additional DoD sites in FY 2007. In the future, additional inpatient documentation, such as operative notes, will be added to the information made available to VA. DoD and VA are also working to ensure VA inpatient documentation is available to DoD on shared patients.

Building on the success of BHIE and CHDR, and in order to accelerate the progress in sharing appropriate health information between DoD and VA in a manner that is compliant with the Health Insurance Portability and Accountability Act and information assurance requirements, the DoD/VA health information technology sharing team has begun working on the CHDR-BHIE Interface. The CHDR-BHIE Interface will make the same data elements currently available in BHIE available to the VA from DoD's Clinical Data Repository of Armed Forces Health Longitudinal Technology Application (AHLTA), the DoD electronic health record. This will significantly accelerate the number of DoD sites with data viewable by VA for shared patients and the number of DoD sites able to view VA data. As of June 22, 2006, AHLTA was implemented at 115 DoD sites worldwide. All DoD sites are expected to have AHLTA by the end of calendar year 2006. Using the CHDR-BHIE Interface, DoD plans to make allergy information, outpatient pharmacy data, radiology reports, and laboratory results (chemistry and hematology) viewable to VA from AHLTA sites by the Second Quarter of FY 2007. Making additional data from AHLTA, such as provider notes, procedures, and problem lists, available to VA is being planned for FY 2007.

DoD and VA are committed to continue to evolve and expand the appropriate sharing of health care information, enhanced care delivery, and continuity of care for shared patients and those who have served our country.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 12

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: In the past, the Government Accountability Office (GAO) has critiqued a lack of VA and DoD performance measures necessary to determine the progress of health care resource-sharing goals. In addition, the GAO determined that the Secretaries of the VA and DoD should develop an evaluation plan for documenting and recording the advantages and disadvantages of each project in order to determine and replicate successful projects system-wide. What is being done to develop performance measures and an evaluation plan necessary to determine the progress of DoD's health care resource-sharing goals with the VA?

Answer: The Joint Strategic Plan (JSP) for Fiscal Years 2006-2008 was recently issued. It revised and updated the 2004 JSP and contains performance measures that demonstrate measurable progress relative to specific strategic milestones.

The Joint Facility Utilization/Resource Sharing Workgroup, under the Health Executive Council, has an evaluation process in place. A "lessons learned" template was disseminated to the DoD/VA Demonstration Site Selection (DSS) sites in the fall of 2005, and the in-progress review (IPR) template was modified to strengthen discussion on advantages, disadvantages, and replicating projects system-wide. The modified IPR template was distributed to the DSS sites in January 2006 and is currently operational. A Standard Operating Procedure and template have been developed to gather "lessons learned" and is operational. In addition, a "lessons learned" repository is being developed that will enable the DSS staff to consolidate and analyze lessons learned, identify trends, facilitate development of guidance for replicating projects, and improve oversight and management of the projects.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 13

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: When will data on outpatient pharmacy data, lab results, allergy information, and patient demographics be shared on a comprehensive and regular basis (not demonstrations but regular and updatable exchanges) between the DoD and the VA?

Answer: The Bidirectional Health Information Exchange (BHIE) enables the real-time, bidirectional transmittal and display of patient demographic data, outpatient pharmacy data, allergy information, radiology text reports, and laboratory results, including surgical pathology, cytology, microbiology, chemistry, and hematology. BHIE is available at all VA sites and is now operational at the following DoD locations:

- Madigan Army Medical Center (AMC), Tacoma, Washington
- William Beaumont AMC, El Paso, Texas
- Eisenhower AMC, Augusta, Georgia
- Great Lakes Naval Hospital, North Chicago, Illinois
- Naval Hospital Balboa, San Diego, California
- National Capital Area, Washington, District of Columbia
- Mike O'Callaghan Federal Hospital, Las Vegas, Nevada
- Landstuhl Regional Medical Center, Landstuhl, Germany
- Tripler AMC, Honolulu, Hawaii
- Womack AMC, Ft. Bragg, North Carolina
- David Grant Medical Center, Travis Air Force Base, California
- Brooke AMC, San Antonio, Texas
- Wilford Hall Medical Center, San Antonio, Texas
- Bassett Army Community Hospital, Fairbanks, Alaska

Building on the success of BHIE and the Clinical Data Repository/Health Data Repository (CHDR) program, and in order to accelerate the progress in sharing appropriate health information between DoD and VA in a manner that is compliant with the Health Insurance Portability and Accountability Act and information assurance requirements, the DoD and VA are working on the CHDR-BHIE Interface. The CHDR-BHIE Interface will make the same data elements currently available in BHIE available to the VA from DoD's Clinical Data Repository of Armed Forces Health Longitudinal Technology Application (AHLTA). This will significantly accelerate the number of DoD sites with data viewable by VA for shared patients and the number of DoD sites able to view VA data. As of June 22, 2006, AHLTA was implemented at 115 DoD sites worldwide. All DoD sites are expected to have AHLTA by the end of calendar year 2006.

Using the CHDR-BHIE Interface, DoD plans to make allergy information, outpatient pharmacy data, radiology reports, and laboratory results (chemistry and hematology) viewable to VA from AHLTA sites by the Second Quarter of Fiscal Year 2007.

DoD and VA are committed to continue to evolve and expand the appropriate sharing of health care information, enhance care delivery, and continuity of care for shared patients and those who have served our country.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 14

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Will data be exchanged on both outpatient and inpatient data? If no, why not? Why was the original goal of 2005 for a limited exchange on certain types of outpatient data missed?

Answer: To further increase the availability of clinical information on a shared patient population, VA and DoD are working together to leverage the Bidirectional Health Information Exchange (BHIE) functionality to allow bidirectional access to inpatient discharge summaries. Testing of this functionality will begin in the Fourth Quarter of Fiscal Year (FY) 2006. Testing will occur at Madigan Army Medical Center and VA Puget Sound with access to inpatient documentation from Madigan's Clinical Information System and VA's VistA system. Planning is in progress for the further deployment of this functionality to additional DoD sites in FY 2007. In the future, additional inpatient documentation, such as operative notes, will be added to the information made available to VA. DoD and VA are also working to ensure VA inpatient documentation is available to DoD on shared patients.

VA and DoD had originally anticipated completion of Clinical Data Repository/Health Data Repository (CHDR) coding and the transfer of the work to a production environment by October 2005 to support the real-time bidirectional exchange of allergy, pharmacy, laboratory, and demographic information via interoperable data repositories. CHDR development and testing milestones were adjusted due to the technical complexity of migrating the work completed on the pilot to a production environment and the parallel development of the VA Health Data Repository and delays in some of its critical dependencies.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 15

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Are the Bidirectional Health Information Exchange (BHIE) and the Federal Health Information Exchange (FHIE) operational at all DoD locations?

Answer: The FHIE pulls historical electronic health information from all DoD sites and transfers that data to the FHIE data repository at the VA Austin Automation Center. FHIE data is currently available to all VA medical facilities. The electronic health data that DoD transmits on separated Service members to VA on a monthly basis includes: laboratory results, radiology results, outpatient pharmacy data, allergy information, discharge summaries, consult reports, admission, discharge and transfer information, and demographic data. For VA patients being treated in DoD facilities, clinical data in nine domains is available within 48 hours of DoD completing the clinical information electronically.

Building on the success of FHIE, DoD is sending electronic pre- and post-deployment health assessment information to the VA. The historical data extraction for separated Service members was completed in July 2005, resulting in approximately 400,000 pre- and post-deployment health assessments being sent to the FHIE data repository at the VA Austin Automation Center. Monthly transmission of electronic pre- and post-deployment health assessment data to the FHIE data repository began in September 2005 and has continued each month since then. VA providers began accessing the data in December 2005. In March 2006, the historical data extraction of pre- and post-deployment health assessments for the Reserve and National Guard members who were deployed and are now demobilized was completed and the data transferred to the FHIE Data Repository. This included over 703,000 pre- and post-deployment health assessments on over 250,000 Reserve and National Guard members who have been deployed and are now demobilized. Demobilized Reserve and National Guard data is now part of the monthly update. As of June 2006, more than 1.3 million pre- and post-deployment health assessment forms on over 568,000 individuals are available to VA.

DoD BHIE implementation continues. BHIE is available at all VA sites and, as of June 2006, was operational at the following DoD locations, in order of their installation:

- Madigan Army Medical Center (AMC), Tacoma, Washington
- William Beaumont AMC, El Paso, Texas
- Eisenhower AMC, Augusta, Georgia
- Great Lakes Naval Hospital, North Chicago, Illinois
- Naval Hospital Balboa, San Diego, California
- National Capital Area, Washington, District of Columbia
- Mike O'Callaghan Federal Hospital, Las Vegas, Nevada

- Landstuhl Regional Medical Center, Landstuhl, Germany
- Tripler AMC, Honolulu, Hawaii
- Womack AMC, Ft. Bragg, North Carolina
- David Grant Medical Center, Travis Air Force Base, California
- Brooke AMC, San Antonio, Texas
- Wilford Hall Medical Center, San Antonio, Texas
- Bassett Army Community Hospital, Fairbanks, Alaska

In order to accelerate the progress in sharing appropriate health information between DoD and VA in a manner that is compliant with the Health Insurance Portability and Accountability Act and information assurance requirements, DoD and VA are working on the Clinical Data Repository/Health Data Repository-Bidirectional Health Information Exchange (CHDR-BHIE) Interface. The CHDR-BHIE Interface will make the same data elements currently available in BHIE available to the VA from DoD's Clinical Data Repository of Armed Forces Health Longitudinal Technology Application (AHLTA), the DoD electronic health record. This will significantly accelerate the number of DoD sites with data viewable by VA for shared patients and the number of DoD sites able to view VA data. As of June 22, 2006, AHLTA was implemented at 115 DoD sites worldwide. All DoD sites are expected to have AHLTA by the end of calendar year 2006. The CHDR-BHIE Interface is anticipated to be operational in the Second Quarter of Fiscal Year 2007.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 16

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The Bilateral Health Information Exchange (BHIE) is available for shared patients (VA and DoD). Approximately how many "shared patients" are there?

Answer: As of May 2006, the BHIE has enabled providers access to electronic health information on over 1.5 million unique correlated (shared) patients. This includes over 628,000 individuals who are not in the Federal Health Information Exchange patient population at this time.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 17

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: What are the long-term plans for the Bilateral Health Information Exchange (BHIE)? Will it be retired when the Clinical Data Repository (CDR) and Health Data Repository (HDR) are fully populated?

Answer: There are currently no plans to retire the BHIE. The Federal Health Information Exchange (FHIE), BHIE, and Clinical Data Repository/Health Data Repository (CHDR) are complementary initiatives that each makes unique contributions to the spectrum of DoD/VA health information sharing. FHIE is designed to provide historical data from DoD to VA. BHIE is designed to provide a real-time view of data for shared patients receiving care from both departments and CHDR is designed to provide computable data so that the electronic health record systems of DoD and VA can use the data from both departments to perform drug-drug interaction and drug-allergy checking.

Building on the success of BHIE and CHDR, and in order to accelerate the progress in sharing appropriate health information between DoD and VA, the DoD/VA health information technology sharing team has begun working on the CHDR-BHIE Interface. The CHDR-BHIE Interface will enable DoD to make data from DoD's CDR of Armed Forces Health Longitudinal Technology Application (AHLTA), the DoD electronic health record, viewable to VA on shared patients. The CHDR-BHIE Interface will make the same data elements currently available in BHIE available to the VA from DoD's CDR of AHLTA. This will significantly accelerate the number of DoD sites with data viewable by VA for shared patients and the number of DoD sites able to view VA data. As of June 22, 2006, AHLTA was implemented at 115 DoD sites worldwide. All DoD sites are expected to have AHLTA by the end of calendar year 2006. The CHDR-BHIE Interface is anticipated to be operational in the Second Quarter of Fiscal Year 2007. Following this initial implementation, DoD and VA are planning to make additional data elements, such as provider/encounter notes, from the CDR viewable by VA via this interface.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 18

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: For a number of years, the DoD and the VA have been working towards a dual exchange of patient information and interoperable electronic medical records. In past reports, the Government Accountability Office (GAO) has critiqued this process, mainly for lack of a detailed project management plan at both agencies, as well as a coordinated project plan, since, without such plans, the risk is increased that the departments will not be able to achieve goals, will encounter delays, and will be unable to deliver the planned capabilities on time and at the cost expected. Both the DoD and the VA have begun new and costly initiatives in HIT in 2004-2005, for which both agencies have taken some steps to respond to GAO's earlier critiques and recommendations. The GAO found, in a September 2005 report, that both Federal agencies had not yet developed a clearly defined project management plan to guide their efforts; had not yet fully populated the repositories that will store the data for planned health systems, and had experienced significant delays in efforts to begin even a limited data exchange. In addition, the GAO found the agencies "severely challenged in their pursuit of the longer term objective - providing a virtual medical record in which data are computable...and in a format that the health information application can act on." What are the most recent short- and long-term goals to exchange "computable" medical information DoD and VA? What are the benefits associated with computable information? Must all of the medical information that will be exchanged be computable?

Answer: During the last week in June 2006, VA and DoD began production testing of the Clinical Data Repository/Health Data Repository (CHDR) Interface in a live patient care environment using standardized, computable pharmacy, and medication allergy data. Clinicians from the William Beaumont Army Medical Center, using Armed Forces Health Longitudinal Technology Application (AHLTA), the DoD's electronic health record system, and the El Paso VA health care system, using VistA, the VA's electronic health record system, exchanged pharmacy and medication allergy data on patients who receive health care from both health care systems. The CHDR Interface also supports the ability to conduct drug-drug and drug-allergy order checking for these same patients. Testing is scheduled to continue through July. CHDR represents the first demonstration of interoperability of pharmacy and medication allergy data in a patient care setting between the DoD Clinical Data Repository and the VA Health Data Repository. Once production testing is concluded, and any issues and problems that arise from use in El Paso are identified, evaluated, and addressed, the DoD and VA will begin enterprise-wide implementation of this capability.

Computable data is data that is in a format that a computer application can act on the data it receives. For example, computable data enables health information systems to employ clinical decision support to provide alerts to clinicians, such as drug-drug interaction checking. In this case, the availability of computable pharmacy data can contribute significantly to patient safety and the usefulness of electronic medical records. However, not all data that is exchanged needs to be computable to be useful. Some of it only needs to be viewable. Provider free text notes, for example, can be displayed to a clinician without the need to map each separate word to a data standard that the computer can "understand." DoD and VA work with clinicians to determine which data needs to be computable and which needs to be viewable.

Developing an electronic interface to exchange computable data between disparate systems is a highly complex undertaking. The CHDR development leveraged the portfolio of existing clinical vocabularies and messaging standards adopted by the Consolidated Health Informatics (CHI) initiative to enable the mapping and translation of the pharmacy data exchanged between the agencies. However, for the medication allergy data being exchanged, there was no standard available to adopt. DoD and VA have done a significant amount of work to be able to exchange computable medication allergy data.

An additional challenge in exchanging computable data is that, even though DoD and VA have adopted the standards through the CHI initiative, the standards adopted are not always complete or ready for operational use. Many of the standards have been developed in a more academic setting and have not been fully operational and ready for day-to-day use in electronic health records systems. This is a national issue and is being addressed on a national scale by the Health Information Technology Standards Panel (HITSP) under the auspices of the Department of Health and Human Services. DoD and VA are engaged with the HITSP to help work through these issues. DoD and VA are firmly committed to continue collaboration to expand the appropriate sharing of health information. As functional requirements dictate, and standards become mature and robust, DoD and VA will continue to balance which items need to be computable and which need to viewable to meet the requirements of our providers for delivery of care.

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Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 19

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The Government Accountability Office (GAO) has reported that, although the agencies have taken action on many of their recommendations, the Clinical Data Repository/Health Data Repository (CHDR) effort still lacks a sufficiently detailed project plan. What are the Departments doing to develop such a plan and when will it be finalized?

Answer: The agencies developed the DoD/VA CHDR Interagency Project Management Plan (PMP), finalized in April 2005, which addresses the roles and responsibilities, project management, project development, data standardization, project organization, meeting management, metrics tracking/reporting, risk management, lessons learned, documentation, quality, and innovation. Associated with the PMP are additional documents such as a CHDR concept of operations document and a work breakdown structure with milestones and deliverables. Throughout the course of the CHDR program development, additional documentation such as a risk management plan, interface control documents, quality assurance plan, test plans, and other documentation has been jointly produced and used.

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Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 20

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Is Health Insurance Portability and Accountability Act (HIPAA) a stumbling block to data sharing between DOD and VA?

Answer: No, HIPAA is not a stumbling block for sharing data between DoD and VA. HIPAA, instead, clearly defines the requirements that identify the points at which sharing can occur. This assists in controlling the flow of information and strengthening the privacy and security of the data. These points of sharing are when a HIPAA compliant authorization is signed, upon separation of the Service member from active duty, or when a shared treatment relationship exists between DoD and VA. On June 27, 2005, a Memorandum of Understanding between DoD and VA went into effect for the purpose of defining data sharing between them.

As of June 22, 2006, DoD has transferred health information for over 3.5 million unique patients to the Federal Health Information Exchange (FHIE) repository. Over 1.8 million of these individuals have presented to the VA for care, treatment, or claim determination. In addition to the FHIE, DoD and VA use the Bidirectional Health Information Exchange (BHIE) as a joint information technology effort that allows the health care data from VA's Computerized Patient Record System and from the DoD's Composite Health Care System to be shared bidirectionally, in real time, and with computable data for use by VA and DoD health care providers. This sharing takes place when a common treatment, health care operation, and/or payment relationship exists for the shared patient population between VA and DoD. FHIE and BHIE are compliant with HIPAA regulations.

Additionally, the Clinical Data Repository/Health Data Repository (CHDR) initiative seeks to ensure the interoperability of the DoD Clinical Data Repository (CDR) with the VA Health Data Repository (HDR) by Fiscal Year 2006. Under CHDR, the DoD and VA are developing the software component that will permit the AHLTA CDR and the Healthe Vet HDR to exchange clinical data so that both TRICARE and Healthe Vet beneficiaries receive seamless care. The HIPAA offices at both VA and DoD are working closely with the CHDR initiative to ensure compliance. The amount of data transferred continues to grow as health information on recently separated Service members is extracted and transferred to the VA.

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Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 21

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The success of VA and DoD efforts to exchange medical information will depend, at least in part, on the departments' abilities to communicate and collaborate effectively. What mechanisms has the DoD put in place with the VA to ensure that this happens?

Answer: The VA/DoD Joint Strategic Plan, 2006-2008, establishes a leadership framework to promote successful partnerships, institutionalize change, and sustain momentum and collaboration into the future. This framework consists of the Joint Executive Council (JEC), the Health Executive Council (HEC), the Benefits Executive Council (BEC), and other necessary sub-councils or workgroups. The JEC is responsible for developing a plan to increase the exchange of knowledge and information between the Departments, as well as with external stakeholders. The HEC Information Management/Information Technology (IM/IT) Work Group, co-chaired by the Chief Information Officer for the Military Health System and the Chief Health Informatics Officer for Veterans Health Administration, provides programmatic oversight for individual, jointly approved, and coordinated HEC IM/IT sharing projects within the framework of the Joint Electronic Health Records Interoperability Program (JEHRI). JEHRI is a series of initiatives and projects designed to support the implementation of standards, development of shared technical and data architectures, and hardware and software design and development required to achieve interoperability of electronic health information between DoD and VA. HEC IM/IT Work Group meetings are held monthly to manage overall JEHRI program schedules, accomplishments, and risk, and to review selected individual projects cost, schedule, and performance. The HEC IM/IT Work Group provides routine updates to the HEC, to include program status, and seek executive decision approval when appropriate. At all times, the HEC IM/IT Work Group ensures that program activities remain consistent with the joint strategic goals provided by the HEC.

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Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Coburn
Witness: Mr. Carl E. Hendricks
Question # 22

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Under the Bob Stump National Defense Authorization Act for Fiscal Year 2003, VA and DoD were to develop interoperable pharmacy systems by October 1, 2004. Was this deadline met, and what actions is the DoD taking to respond to this mandate?

Answer: The VA and DoD met initial 2004 milestone goals and have continued to collaborate on the Clinical Data Repository/Health Data Repository (CHDR) effort to establish interoperability between DoD and VA, to include the exchange of computable outpatient pharmacy and medication allergy information on shared patients.

Phase I of the CHDR Pharmacy Prototype, the initial interface between DoD's Clinical Data Repository and the VA's Health Data Repository, was successfully completed in September 2004. The Pharmacy Prototype provided for the bi-directional exchange of computable outpatient pharmacy data, and included patient demographics, outpatient pharmacy (Military Treatment Facility, mail order, and retail pharmacy network), laboratory, and allergy information in a laboratory environment. The CHDR Pharmacy Prototype was also demonstrated to the Government Accountability Office on October 14, 2004.

In January 2006, this capability was successfully demonstrated to DoD and VA senior leadership. The demonstration included the ability to support drug-drug and drug-allergy checking using outpatient pharmacy and allergy information from both departments.

VA and DoD will begin production testing of the CHDR Interface during the last full week in June 2006, in a live patient care environment using standardized, computable pharmacy, and medication allergy data. Clinicians from the William Beaumont Army Medical Center, using Armed Forces Health Longitudinal Technology Application, the DoD's electronic health record system, and the El Paso VA Healthcare System, using VistA, the VA's electronic health record system, will exchange pharmacy and medication allergy data on patients who receive healthcare from both healthcare systems. The CHDR interface also supports the ability to conduct drug-drug and drug-allergy order checking for these same patients. Testing is scheduled to continue through July 2006. CHDR represents the first demonstration of interoperability of pharmacy and medication allergy data in a patient care setting between the DoD Clinical Data Repository and the VA Health Data Repository. Once production testing is concluded, and any issues and problems that arise from use in El Paso are identified, evaluated, and addressed, the DoD and VA will begin enterprise-wide implementation of this capability.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Akaka
Witness: Mr. Carl E. Hendricks
Question # 23

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The DoD and VA have made significant improvements in HIT. Can you describe the efforts that DoD has made to ensure that patient privacy interests are adequately protected as more and more information is shared electronically? What challenges have been encountered in ensuring the privacy of patients' information?

Answer: The Military Health System (MHS) complies with DoD policies on information assurance, privacy, and telework as these policies relate to the protection of sensitive data, especially outside the normal government office environment. We also have TRICARE Management Activity (TMA) policy, which addresses the protection of personally identifiable information. In compliance with Office of Management and Budget (OMB) direction, we have conducted a thorough review of our policies and processes. This review addressed all administrative, technical, personnel, and physical means used by TMA to control such information, including, but not limited to, procedures, and restriction on the access to and the use or removal of personally identifiable information beyond agency premises or control. Also in accordance with OMB direction, we are in the process of reminding our workforce of their specific responsibilities for safeguarding personally identifiable information, the rules for acquiring and using such information, as well as the penalties for violating these rules.

Our challenge is performing a balancing act between the implementation of computer security controls and ensuring that our beneficiaries have access to quality health care. In an environment of evolving technology, the ever present threat is also evolving. Prior to implementation, we weigh the convenience of new technology, including removable media and wireless networks, with the potential for risk to personally identifiable information. We consider the risks of data aggregation and data mining when we review privacy impact assessments and data use agreements. We take advantage of the experience of others through reviewing Government Accountability Office recommendations. We only implement technology that allows us to maintain an appropriate risk mitigation strategy. We must remain constantly vigilant and manage risk in ways that provide appropriate protection for the personally identifiable information entrusted to us by our beneficiaries.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Akaka
Witness: Mr. Carl E. Hendricks
Question # 24

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: On February 11, 2005, Office of Management and Budget, Deputy Director for Management, Clay Johnson, issued a memorandum directing each agency to designate a senior official who would have agency-wide responsibility for privacy issues relative to information management. How does DoD's privacy officer work with information technology personnel to make sure that HIT efforts will not lead to reduced privacy protections for patients?

Answer: TRICARE Management Activity (TMA) assigned the responsibility of privacy officer on April 14, 2003, and chartered a dedicated Privacy Office on October 31, 2003. Since that time, the TMA Privacy Office has worked closely with the Information Management, Technology, and Reengineering Directorate (IMT&R) to ensure that HIT efforts do not lead to reduced privacy protections for patients in several ways, including issuing policy, assigning responsibility, conducting awareness training, and integrating the privacy and security of health information into business processes. This collaboration is evidenced by a wide range of policies on various topics including Health Information Security and Privacy, Privacy Impact Assessments, Information Assurance (IA), and Management of Unauthorized Disclosure of DoD Sensitive Information Incidents. In addition to policy, the TMA Privacy Office and IMT&R have worked with the Services to ensure privacy and security officers are appointed and Medical Information Security Readiness Teams are established at every Military Treatment Facility to review local compliance with requirements. They also formed the TMA Health Information Privacy and Security Compliance Committee, with representation from various TMA offices and the Services.

The TMA Privacy Office also administers annual Health Insurance Portability and Accountability Act training to all Military Health System (MHS) personnel, which reinforces privacy protection requirements. For MHS privacy and security officers worldwide, the TMA Privacy Office holds yearly training conferences and provides regular training Web casts. In addition to its training work, the TMA Privacy Office oversees the background investigations of all TMA contractor employees, manages contractor requests for data to ensure its use is appropriate, and assisted in setting up the requirement for purchased care contractors to send and receive data to and from DoD Systems through a secure Defense Information Systems Agency (DISA) managed business-to-business gateway. All of these efforts have ensured that the MHS is prepared for and aware of the requirement to protect patient privacy as HIT efforts become more prevalent.

The MHS IA Program ensures the protection of sensitive information by complying with DoD

and Federal policies and guidance related to physical, electronic, and personnel security matters. DoD Directives 8500.1 and 8500.2, and MHS IA policies ensure that the MHS has implemented an effective program to protect information systems and medical data, and ensure that personnel receive adequate, regular training commensurate with levels of responsibility. In accordance with the MHS IA Program, Web-based employee refresher training is conducted annually to help ensure security of personal health information. The MHS manages a rigorous DoD Information Technology Security Certification & Accreditation Process (DITSCAP) to assess electronic and physical security controls and ensure compliance with DoD security requirements. In addition, the MHS uses the Defense Information Systems Agency (DISA) Secure Remote Computing Security Technical Implementation Guide as a technical reference and maintains strict compliance with legislative, DoD, and MHS policies and procedures. All systems security processes are tied to the DoD, Office of Management and Budget, National Institute Standards and Technology, DISA, National Security Agency, and other relevant Federal security requirements.

The MHS has completed privacy impact assessments on all systems in accordance with the E-Government Act of 2002. Training follows DoD Regulation 6025.18-R, "DoD Health Information Privacy Regulation," dated January 24, 2003. This regulation is issued under the authority of DoD Directive 6025.18, Privacy of Individually Identifiable Health Information in DoD Health Care Programs, dated December 19, 2002. It prescribes the use and disclosure of protected health information.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Akaka
Witness: Mr. Carl E. Hendricks
Question # 25

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The Office of the National Coordinator for Health Information was established in 2004 by Executive Order 13335, which calls for collaboration between VA, the Department of Health and Human Services (HHS), the Office of Personnel Management (OPM), and DoD to spread the use of HIT. How is DoD working with HHS, OPM, and VA in developing HIT infrastructure to ensure patient privacy? What are some best practices found by DoD in this regard?

Answer: DoD participates in HHS's Office of the National Coordinator for HIT activities, including the American Health Information Community (the Community), the HIT Policy Council, and the HIT Standards Panel. We have representatives engaged in the community chartered Electronic Health Record, Biosurveillance, and Consumer Empowerment Work Groups. These work groups, along with the Chronic Care Work Group, identified patient privacy as a significant, crosscutting concern. The Community Commissioners, including the Assistant Secretary of Defense for Health Affairs, approved the recommendation to create a Consumer Empowerment subgroup comprised of privacy, security, clinical, and technology experts from the Community Workgroup to address this important issue. The recommendations from the subgroup should establish a policy framework and address issues such as methods of patient identification, authentication, controlling access to personal health information, mechanisms to ensure data integrity, and policies for breaches of personal health information confidentiality.

Our best practices include identification, formulation, promulgation, and adherence to DoD Information Assurance (IA) policy. DoD IA policy directs that components implement policies, procedures, and technology to protect patient information. The DoD IA Vulnerability Management Program ensures that vulnerabilities are quickly mitigated through the application of software patches and organizational compliance. DoD has a robust certification and accreditation program, the DoD Information Technology Security Certification and Accreditation Process, that confirms system configuration to protect patient privacy. In addition, annual audits are performed to verify that systems and networks in the HIT infrastructure have installed patches, and mitigated vulnerabilities that would permit unintended access to patient information. DoD is implementing measures to enhance logon security through smart card technology, which will allow only those with a "need to know" access to patient information. The encryption of patient information at rest and in transit is being evaluated as a measure to further enhance privacy protection. The installation of assurance technology (firewalls, intrusion detection systems, audit software, antivirus software, etc.) protects patient information and monitors anomalies. DoD has mandated a certified IA workforce that will have the requisite skills to ensure the privacy of patient information.

The DoD medical health community, through the Defense Information Technology Standards Registry (DISR) Configuration Management Board, is working with the Assistant Secretary of Defense for Networks and Information Integration, and the Office of Management and Budget's Federal Enterprise Architecture (FEA) Program Management Office, to align FEA standards to DoD's mandated DISR standards to promote interoperability of the exchange of secure patient information in compliance with the Health Insurance Portability and Accountability Act. In addition, the HIT Standards Panel has recommended standards to the DISR for the alignment of commercial, DoD, and VA security and privacy standards. The Health Architecture Interagency Group (DoD and VA), coordinates the security architectures between the two agencies to enforce the protection of patient information.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Carper
Witness: Mr. Carl E. Hendricks
Question # 1

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Provider adoption of electronic medical records is a challenge. Quality of end user training seems to be one of the most critical factors influencing user acceptance. What are you doing through training to address user acceptance at the DoD?

Answer: As of June 22, 2006, 49,808 of 63,000 total users have been fully trained, to include 16,723 health care providers. To accommodate different learning preferences, the training strategy includes classroom, instructor-led training, and "over the shoulder" or "on-the-job," in the clinic training. The training is scenario-based, meaning that the users are trained to use the system to accomplish specific activities that they must do in their day-to-day activities. An instructional video and computer-based training that can be done when convenient for the user is available to supplement the classroom and workspace training. Additionally, each user, upon completion of their training, fills out an evaluation form. The cumulative average rating is exceptional, showing a very high user satisfaction with the training, 4.65 out of a possible 5.0 scale. Based upon the user feedback, suggested improvements are incorporated into the training methodologies.

DoD generally surveys the end users quarterly to determine their satisfaction with the Armed Forces Health Longitudinal Technology Application. Both health care providers and non-providers are surveyed for each study. We recently completed a survey that opened on June 7th and closed on June 21st and are analyzing the results. The most recent previous study, conducted in January-February of 2006, indicated increases in almost all satisfaction variables for both provider-only and all-user groups.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Carper
Witness: Mr. Carl E. Hendricks
Question # 2

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: The difficulties the medical community faced trying to cope with the medical needs of displaced persons in the absence of medical information following Hurricane Katrina exposed the glaring need in this country for a National network of electronic health records. Did Armed Forces Health Longitudinal Technology Application (AHLTA) have any impact on continuity of patient care in the aftermath of Hurricane Katrina?

Answer: Several days after Hurricane Katrina struck, Military Health System personnel toured some of the areas that were devastated. They learned, first hand, of the plight of thousands of retirees whose paper health records were destroyed and they saw the difficulties the medical community faced trying to cope with the medical needs of displaced persons in the absence of medical information. Hurricane Katrina exposed the glaring need in this country for a National network of electronic health records.

Any Military Treatment Facility (MTF), regardless of location, that has activated AHLTA, has access to beneficiary health data information in the Clinical Data Repository (CDR). The largest MTF in the affected geographical area was Keesler Air Force Base (AFB) Medical Center. Prior to Hurricane Katrina, the data from Keesler AFB Medical Center was imported into the CDR. The strength of the electronic health record and centralized CDR was immediately apparent when displaced patients from Keesler AFB, Biloxi, Mississippi, continued to receive care when they were displaced to Lackland AFB, Texas, where their providers were able to access their records in the CDR through ALTHA. Similarly, a number of displaced patients from the Gulf region had been undergoing treatment for cancer. Their records were available through AHLTA at other MTFs, and their continuity of care was largely unimpeded by the hurricane's wrath. One of these patients arrived at Naval Medical Center Portsmouth, Virginia, and healthcare providers were able to access her records through AHLTA and provide her next chemotherapy exactly as scheduled.

Another system in use in the MHS since 2001 is the Pharmacy Data Transaction Service (PDTS) which contains a significant portion of the information that comprises an electronic prescription. The information in PDTS includes not only patient prescription information from our MTFs, but also from our mail order and retail contracts. PDTS continued to support drug-drug and drug-allergy checking for displaced beneficiaries regardless of their locations following Hurricane Katrina.

The utility of electronic health records in coping with the medical needs of displaced persons in the aftermath of disasters such as Katrina is now undisputed.

Hearing Date: June 22, 2006
Committee: Senate Homeland Security and Governmental Affairs Committee
Member: Senator Carper
Witness: Mr. Carl E. Hendricks
Question # 3

Lessons Learned? Assuring Healthy Initiatives in Health Information Technology (HIT)

Question: Upon request, my office has not received information on the funding levels for Armed Forces Health Longitudinal Technology Application (AHLTA) over the past three years. Do you have those figures?

Answer: When fully deployed at the end of 2006, AHLTA Block I is expected to support more than 132,500 military and civilian medical personnel providing medical treatment at 70 inpatient Military Treatment Facilities and 828 outpatient medical/dental clinics spanning 11 time zones worldwide. AHLTA generates, stores, and provides secure online access to comprehensive patient records for more than 9.2 million Military Health System beneficiaries. AHLTA's initial capabilities include encounter documentation, order entry/results retrieval, encounter coding support, alerts and reminders, role-based security, health data dictionary, master patient index, and ad hoc query capability with secure connectivity to the clinical data repository around the clock.

Current AHLTA life cycle cost estimates are as follows:

- Total life cycle acquisition costs, Fiscal Year (FY) 1997 to Full Operational Capability (FOC) = $1.2 billion
- Total implementation and start-up cost (FY 1997– FY 2006) = $783 million
- FY 2006 budget = $203.7 million

Prior year AHLTA funding levels:

- FY 2004 = $147.8 million
- FY 2005 = $168.5 million

Acquisition costs include research, development, test, and evaluation, procurement and acquisition, and operations and maintenance used for the development, integration, initial procurement, and deployment of the system.

QUESTIONS AND RESPONSES FOR THE RECORD FROM DR. MICHAEL KUSSMAN

Subcommittee on Federal Financial Management, Government Information, and International Security
Committee on Homeland Security and Government Affairs

June 22, 2006

Hearing on "Lessons Learned? Assuring Healthy Initiatives in Health Information Technology"

Question 1: In over a dozen different reports, the VA Inspector General has identified personal information security as a major problem at the Department and has faulted VA leadership for its slow response in resolving serious access and control weaknesses and deficiencies that have been reported and re-reported without implementation for years. The most recent breakdown in information technology security at the VA was veterans, including an estimated 80% of all active military members, as well as some National Guard and Reserve, and military widows. Understandably, dismal computer security grades in government agencies combined with the magnitude of the recent data leak at the VA make both industry and individuals jittery when it comes to Federal initiatives related to IT protection and privacy. What is being done to correct VA Inspector General reports critical of information security lapses?

Response: Department of Veterans Affairs (VA) takes the Inspector General's findings on information security extremely seriously, and has formulated a data security plan that will enhance internal and external controls over veterans' sensitive information. The media protection segment of the plan has two key elements that are targeted toward preventing the type of recent data compromise which was facilitated by the use of mass storage devices to transport significant amounts of data to a home worksite. The data security plan will put technological controls in place that require all information which is transported from VA facilities in portable electronic storage devices (such as computer disks, thumb drives, and portable hard drives) as well any data which are accessed from remote, alternate work sites, to be encrypted. This will provide strong assurance that, even in the event of loss or theft of storage devices and computers, the information on these devices cannot be accessed by any unauthorized person.

The key second element of the data security plan that will address media protection is enforcement of individual accountability. On June 6, 2006, the Secretary signed a policy that holds all employees accountable for safeguarding sensitive information within their control or possession. The directive outlines and clarifies each employee's responsibilities and obligations regarding the protection of confidential and Privacy Act-covered information. It also informs all users that compliance violations could result in administrative, civil or criminal penalties.

On June 7, 2006, the Secretary signed a policy requiring supervisory approval prior to any VA employee transporting, transmitting, accessing, or using VA data outside the confines of VA facilities. Enforcement of these directives is already being implemented. Related

activities include taking a Department-wide inventory of all individuals with access to VA sensitive information; completion of security awareness and privacy training by all employees; inspection of laptops for appropriate security software; and the preparation of a Letter of Agreement which each information user will sign to ensure accountability.

While these actions address the root cause of the recent incident, the Department is continuing to maintain the security of its electronic boundaries through VA-wide anti-virus and intrusion detection systems, firewall protections, and the professionalism of its information security workforce. These security safeguards, along with other actions identified in the data security plan, are targeted toward promoting the development, implementation, and operation of more secure information systems within the Department. They establish a due diligence standard that will enhance VA's ability to preclude future data loss, theft, or unauthorized access.

Question 2: VA has also received low information security scores from the House Government Reform committee's annual report card on government computer security efforts form 2001 – 2005. What efforts are underway to bolster low computer security grades in 2006 and beyond?

Response: The score issued by the House Committee on Government Reform is based on an assessment of agency Federal Information Security Management Act (FISMA) reports. VA believes that ongoing remediation activities as described in response to question above will improve our grade.

Question 3: When is it expected that there will be a new Chief Information Officer at the VA? With the recent departure of Robert McFarland, the former CIO, is it expected that a delay in an appointment would have any impact on the administration of the VA IT budget (or the move to a Federated Model for IT management)

Response: The White House recently nominated Robert T. Howard to be the Assistant Secretary for Information and Technology (OI&T). The incumbent in that position will also serve as VA's CIO. Mr. Howard is currently the Senior Advisor to the Deputy Secretary and Supervisor, OI&T. In the interim, strong leadership is in place to ensure that all critical IT budget issues are appropriately addressed. The transition to the Federated Model is proceeding as planned.

Question 4: What are the program performance measures and goals that have been established to monitor the VA IT budget?

Response: An earned value management system (EVMS) is in development that will help monitor and track the performance of those projects that are considered "developmental." An operational analysis (OA) system is also being developed to help monitor and track the performance of those projects that are considered "operational." These two systems should cover approximately 80 percent of the IT budget. The remaining 20 percent of the funds are allocated to small projects that fall outside the thresholds of the EVMS and OA systems.

Question 5: What are the latest cost estimates for the rollout of HealtheVet and the associated Health Data Repository (HDR)?

Response: The latest rollout cost estimate of HealtheVet as reflected in the fiscal year (FY) 2007 Office of Management and Budget Exhibit 300 is $1.9 billion over 12 years. This includes the development through FY 2010 and ongoing maintenance through FY 2014. The latest rollout cost estimate for the Health Data Repository (HDR) is $258 million. The HDR cost is not included in the HealtheVet cost estimate.

Question 6: Does the VA still expect to complete all six initiatives comprising HealtheVet and the HDR system in 2012? How much data is currently in the system? What are the critical benchmarks for moving forward with the HDR?

Response: VA still anticipates a 2012 completion of all six HealtheVet initiatives, assuming the current funding profile. The HealtheVet development program is divided into two major areas. The first is application development and the second is foundations modernization. Foundations modernization, essentially the operating software infrastructure of the veterans' health information systems and technology architecture (VistA) system has been restructured to better align its scope with guidance provided by VA and Office of Management and Budget (OMB). Its six major initiatives include platform, reengineering, data standardization, common services, test lab and legacy-VistA. They are in the process of being realigned and this realignment will be reflected in the FY 2007 revised and FY 2008 OMB 300 submissions.

As of July 1, 2006 there are approximately 6.7 billion records in the Health Data Repository (HDR). This number includes the data in the outpatient pharmacy, vitals and allergies domains. On a daily basis, HDR receives 2.3 million messages, all of which are stored centrally in a single repository.

In order to ensure the integrity and value of the data in HDR, the continued development of the HealtheVet applications is essential. HDR is a critical component in the Veteran Health Administration's (VHA) standardization effort and is foundational, supporting many other current and future initiatives such as the veterans health information model (VHIM) and VA/Department of Defense (DoD) inter-operability. Our ability to meet the following OMB 300 milestones is contingent on HDR:

- HDR National Construction complete (7/26/04 – 9/30/07);
- HDR deployment to all sites to include implementation and the population of HDR databases (10/1/07 – 9/30/09)
- HDR regional construction and implementation complete (4/2/07 – 9/30/09)

Question 7: When will data on outpatient pharmacy data, lab results, allergy information, and patient demographics be shared on a comprehensive and regular basis (not demonstrations but regular and updatable exchanges) between the VA and the DOD?

Response: This exchange is currently taking place on a comprehensive and regular basis between VA and DoD. The bidirectional health information exchange (BHIE) now supports the real-time bidirectional exchange of outpatient pharmacy data, laboratory results including surgical pathology, cytology, microbiology, chemistry and hematology, and radiology text

reports, medication and food allergy information and patient demographics among all VA facilities and the following DoD locations:

- Madigan Army Medical Center (AMC) Tacoma, WA
- William Beaumont AMC El Paso, TX
- Eisenhower AMC Augusta, GA
- Naval Hospital Great Lakes, North Chicago, IL
- Naval Hospital San Diego-Balboa, CA
- National Capital Area
- Mike O'Callaghan Federal Hospital, Las Vegas, NV
- Landstuhl Regional Medical Center, Landstuhl, Germany
- Tripler Army Medical Center, HI
- Womack Army Medical Center, Ft Bragg, NC
- David Grant Medical Center, Travis AFB, CA
- Brooke Army Medical Center, San Antonio, TX
- Wilford Hall Medical Center, San Antonio, TX
- Bassett Army Community Hospital, Fairbanks, AK

Question 8: Will the data be exchanged on both outpatient and inpatient data? If not, why not? Why was the original goal of 2005 for a limited exchange on certain types of outpatient data missed?

Response: Data will be exchanged on both outpatient and inpatient data. BHIE supports the real-time bidirectional exchange of electronic health data between VA's and DoD's legacy health information systems, VistA and composite health care system (CHCS), respectively. VA's VistA system, or veterans health information systems and technology architecture, is an integrated system and contains both inpatient and outpatient data. BHIE provides DoD access to both inpatient and outpatient VA data for the agreed upon BHIE domains which include laboratory results including surgical pathology, cytology, microbiology, chemistry and hematology, and radiology text reports, medication and food allergy information and patient demographics. BHIE does not provide access to inpatient pharmacy data at this time.

To further increase the availability of clinical information on a shared patient population, VA and DoD are working together to further leverage the BHIE functionality to allow bidirectional access to DoD and VA inpatient discharge summaries. Testing of this functionality began in the fourth quarter of FY 2006 at Madigan Army Medical Center (MAMC) and VA Puget Sound. DoD and VA will exchange inpatient documentation from MAMC's clinical information system (CIS) and VA's VistA system. Planning is in progress for the further deployment of this functionality to additional DoD sites in FY 2007. In the future, additional inpatient documentation, such as operative notes, will be added to the information made available to VA. DoD and VA are also working to ensure VA inpatient documentation is available to DoD on shared patients.

VA and DoD's target goal for 2005 related to the bidirectional exchange of computable pharmacy and medication allergy data between the DoD clinical data repository (CDR) and VA health data repository (HDR) known as "CHDR." CHDR represents data exchange between VA and DoD next-generation systems and it is believed to be the first

time that two large health enterprises will support this capability.

The original 2005 target date was missed due to the complexity of VA simultaneously developing and testing its HDR and other next-generation applications while also developing interoperability capability with DoD. The first-time joint implementation of health data standards and terminologies by both Departments also added an additional level of complexity that was not realized until testing began. During the week of June 26, 2006, in a live patient care environment, VA and DoD will test the exchange of computable pharmacy and medication allergy data and the ability to conduct drug-drug and drug-allergy checks using data from each other's data repositories. The Departments will continue to test the CHDR interface in this live environment and then finalize plans for enterprise roll-out to additional locations.

Question 9: A 2005 Carnegie Mellon independent review of VA's proposed initiative, HealtheVet, gave the agency failing grades for the program, adding that the plan to spend billions to modernize the health care system for millions of veterans has unacceptably high risks. Carnegie Mellon researchers said VA officials must work harder to develop a framework to meet the program's needs. VA has requested an additional $3.5 billion in funds to overhaul their current network over the next 10 years. What efforts are being made to respond to the findings of the report?

Response: VHA is moving to transform our development organization in alignment with the 2005 findings of the Carnegie Mellon Software Engineering Institute (SEI). VHA is transforming its current software development organization into a "line-of-business/competency aligned" organization modeled after SEI, DoD, and commercial best practices. The various competencies are being formulated as skill or capability areas such as systems design, development, test, production, fielding, training etc. VHA has engaged industry-recognized experts to support the transformation including SEI itself. VA has also begun benchmarking the new organization against recognized world-class companies and DoD organizations including Lockheed-Martin, General Electric, Microsoft and NAVAIR. VA is also improving the professionalism of the VHA Office of Information (OI) management staff by significantly expanding its executive team with experienced and proven major program managers and business process leaders. It should be noted that VHA's development budget was reduced in FY 2006 and 2007.

Question 10: As you know, the Core Financial and Logistics System (Core FLS) has been estimated to have cost $472 million in lost taxpayer dollars when the program was discontinued late 2004. The Financial and Logistics Integrated Technology Enterprise (FLITE) was developed from recommendations and lessons learned from the failed pilot of CoreFLS at Bay Pines.

a.) What is the current prognosis and status for FLITE?

Response: The current prognosis for the financial and logistics integrated technology enterprise (FLITE) program is excellent. While the status of FLITE is still within the planning stage, VA continues to make substantial improvements that will support the program. VA initiated an effort in August 2005 to standardize accounting business processes and develop Department-wide standard operating procedures.

VA has been conducting seminars and workshops to achieve the following objectives:

- Complete review of VA financial functions requirements.
- Identify key policy documents driving implementation of business processes.
- Review logistics standardization process and review newly developed standard operating procedures for logistics and prosthetics.
- Identify major financial processes requiring standardization.
- Develop recommended "next steps."
- Strategize for successful change management.
- Match VA-identified requirements to the Office of Federal Financial Management's core financial system requirements.
- Identify and mitigate the impact of non-departmentally sponsored software applications in local use at field facilities on the process standardization effort.
- Identify and resolve concerns related to the management of miscellaneous obligations and purchase cards.
- Identify and eliminate A-123 control weaknesses.

VA has also developed a remediation plan to address an auditor-reported material audit weakness related to VA's lack of an integrated financial management system.

A key component of the remediation plan is the financial reports/data warehouse (FRDW) initiative. This initiative is responsive to VA's need to correct deficiencies that have led to poor integration between our various financial systems. The FRDW team is completing detailed mapping, analysis, and identification of required system modifications for the nine major interfaces to and from the current core financial system, the financial management system (FMS). These major interfaces correspond to VA's nine largest programs that represent approximately 85 percent of VA's budget outlays. Any deficiencies noted in the analyses are being provided to the systems owners for corrective action. The data warehouse will become the common repository for interface data, and procedures are being developed to analyze interface data and ensure data integrity. To that end, VA is currently completing a proof-of-concept using VA's payroll system, a major system that interfaces to FMS. Once the independent verification and validation of the new FRDW proof-of-concept is completed, VA will update the plan of action for completing the remaining system interface modifications. These actions are in concert with the FLITE program and are designed to ensure that prior to FLITE implementation, business system interfaces are thoroughly documented, are fully FFMIA compliant, support the balances reported in VA's core accounting system (FMS and FLITE), and adhere to the internal control objectives of OMB circular A-123. These proactive activities will ensure that legacy business systems provide FLITE clean, accurate data while reducing the severity of the material audit weaknesses and ensuring the success of FLITE.

b.) Based on the poor success of its recent predecessor, CoreFLS, what safeguards have been put in place to track the success of the program?

Response: FLITE has the support and direct involvement of VA senior leadership. In addition, two senior executives will be hired to manage the program. A program management office headed by one of the senior executives will be located in Washington,

DC, and will provide oversight and direction for the FLITE initiative. A software development office, headed by the second senior executive, will be established at VA's Financial Services Center and Austin Automation Center in Texas. Additionally, VA will adhere to the following guidelines:

- **Quality Planning** – VA will document and outline the methods, procedures, standards, and mechanisms that will be used to produce quality deliverables for FLITE.
- **Quality Assurance** – The quality process itself will be evaluated to ensure all appropriate measures are being taken to infuse quality into each deliverable and project phase.
- **Quality Control** – The deliverables will be measured to verify that the intended level of quality has been achieved.

VA's Systems Quality Assurance Service, also located in Austin, Texas, will provide independent verification and validation (IV&V) support to FLITE and report project status directly to senior management. In addition, VA will use the following tools to ensure success:

- An aggressive and comprehensive change management plan will be employed.
- Performance metrics will be established to monitor progress/success.
- Project management tools such as Primavera and earned value management will be used to monitor key project indicators, such as cost and schedule, and provide early detection of project slippage.
- Frequent senior management reviews will be established to assess overall project status.
- IV&V activities will be coordinated to ensure that FLITE stays on target.

c.) Has there been an independent evaluation of FLITE?

Response: No evaluation of FLITE has been conducted as of yet because it is only in the planning stage.

Question 11: It has been reported that full-scale development of HealtheVet is currently on hold. To what extent is a setback expected? To what extent would any delay in HealtheVet impact the Clinical Data Repository/Health Data Repository?

Response: On April 1, 2006 VHA demonstrated sufficient progress for Congress to release funds to support the HealtheVet program through FY 2006. VHA is currently undergoing a full program review and restructuring effort. VHA plans to undertake a full requirements and health information architecture analysis during FY 2007. This supports the initial delivery of the foundational components necessary for VA's future health information systems which is targeted for 2012.

A delay in HealtheVet will translate to delays in data standardization and application modernization and redesign efforts. As such, we will be unable to populate additional domains in the health data repository (HDR). This data population is required to support the Clinical Data Repository (CDR)/HDR, (CHDR) project. The data currently in the HDR will support the bidirectional exchange of computable pharmacy and medication

allergy data between DoD's CDR and the VA HDR. CHDR represents computable data exchange between VA and DoD next-generation systems and it is believed to be the first time that two large health enterprises will support this capability.

The bidirectional health information exchange, known as "BHIE" and the interface between the DoD Clinical Data Repository (CDR) and VA Health Data Repository (HDR), known as "CHDR", use data from different sources. For this reason, although BHIE and CHDR are both bidirectional, the two interfaces support different types of data exchange.

BHIE data are text-based and non-standardized and shared between VA and DoD legacy systems, VistA and the composite health care system (CHCS). BHIE data are viewable between VA and DoD facilities but are not computable. The bidirectional viewing of BHIE data leverages work that was already done as part of the Federal health information exchange (FHIE). Therefore, multiple data types within these legacy systems are capable of being viewed across Departments (e.g., allergy, outpatient pharmacy, laboratory results, and radiology reports.)

VA and DoD next generation systems, HealtheVet and AHLTA, store data in a new standardized format in data repositories, the VA health data repository (HDR) and DoD clinical data repository (CDR). CHDR is the interface between the data repositories. Like BHIE, CHDR supports the bidirectional sharing of data. However, CHDR data shared between data repositories are "computable" because the data are standardized and capable of being mediated and understood in each system. For this reason, VA CHDR outpatient pharmacy and allergy data may be used in DoD systems to provide automatic order checks for drug-drug and drug-allergy interactions and vice-versa.

Until HealtheVet development continues and more data types are standardized and placed into the HDR (e.g., laboratory and other data types) CHDR will not support the exchange of additional computable data.

Question 12: Have the data standards been set between the VA and DOD to guide the exchange of health data? What standards have been developed to date, and what other Federal agencies have been involved in the process?

Response: Yes, agreement has been reached between VA and DoD for the purposes of exchanging demographic and administrative data about veterans. The initial data standards to guide the exchange of health data between VA, DoD, and other providers of health care across the government were identified by the consolidated health informatics (CHI) initiative. As part of CHI, VA and DoD jointly adopted 20 standards and made significant progress toward identifying and adopting standards in the remaining areas. Standards were adopted for the following:

- Health Level 7 (HL7) messaging standards to ensure that each Federal agency can share information that will improve coordinated care for patients such as entries of orders, scheduling appointments and tests and better coordination of the admittance, discharge and transfer of patients.

- National Council on Prescription Drug Programs (NCDCP) standards for ordering drugs from retail pharmacies to standardize information between health-care providers and pharmacies. These standards already have been adopted under the Health Insurance Portability and Accountability Act (HIPAA) of 1996, and ensure that parts of the three Federal departments that are not covered by HIPAA will also use the same standards.
- The Institute of Electrical and Electronics Engineers 1073 (IEEE1073) series of standards that allow for health-care providers to plug medical devices into information and computer systems to monitor information from an intensive care unit (ICU) or through telehealth services on Indian reservations, and in other circumstances.
- Digital Imaging Communications in Medicine (DICOM) standards that enable images and associated diagnostic information to be retrieved and transferred from various manufacturers' devices as well as medical staff workstations.
- Laboratory Logical Observation Identifier name Codes (LOINC) to standardize the electronic exchange of clinical laboratory results.
- Health Level 7 (HL7) vocabulary standards for demographic information, units of measure, immunizations, and clinical encounters, and HL7's clinical document architecture standard for text-based reports. (five standards)
- The College of American Pathologists Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) for laboratory result contents, non-laboratory interventions and procedures, anatomy, diagnosis and problems, and nursing. The Department of Health and Human Services (HHS) is making SNOMED-CT available for use in the United States at no charge to users. (five standards)
- Laboratory Logical Observation Identifier Name Codes (LOINC) to standardize the electronic exchange of laboratory test orders and drug label section headers. (one standard)
- The HIPAA transactions and code sets for electronic exchange of health-related information to perform billing or administrative functions. These are the same standards now required under HIPAA for health plans, health-care clearinghouses and those health-care providers who engage in certain electronic transactions. (one standard)
- A set of Federal terminologies related to medications, including the Food and Drug Administration's names and codes for ingredients, manufactured dosage forms, drug products and medication packages, the National Library of Medicine's RxNORM for describing clinical drugs, and the VHA's national drug file reference terminology (NDF-RT) for specific drug classifications. (one standard)
- The Human Gene Nomenclature (HUGN) for exchanging information regarding the role of genes in biomedical research in the federal health sector. (one standard)
- The Environmental Protection Agency's Substance Registry System for non-medicinal chemicals of importance to health care. (one standard)

Recently, the CHI initiative was absorbed into the larger Federal Health Architecture (FHA) initiative that is overseen by the Office of the National Coordinator for Health Information Technology. The importance of the work and the significance of standards adoption on a national level is now more clearly understood, is viewed as a national issue, and is being addressed on a national scale by the Health Information Technology Standards Panel (HITSP) under the auspices of HHS which incorporates recommendations from the American Health Informatics Community (AHIC).

Question 13: What is being done to develop performance measures and an evaluation plan necessary to determine the progress of VA's health-care resource-sharing goals with the DOD?

Response: Performance and evaluation measures are contained in the DoD/VA Joint Strategic Plan (JSP). The JSP is managed by the Joint Executive Council, co-chaired by DoD Under Secretary of Defense for Personnel and Readiness and VA Deputy Secretary. VA and DoD recently updated the plan for FY 2006-2008. The updated JSP contains performance measures and strategic milestones that permit VA and DoD to determine progress.

Question 14: Are the Bidirectional Health Information Exchange and the Federal Health Information Exchange operational at all VHA locations?

Response: Yes, bidirectional health information exchange (BHIE) and the Federal health information exchange (FHIE) are operational at all VHA locations.

Question 15: The Bilateral [sic] Health Information Exchange is available for shared patients (VA and DOD). Approximately how many "shared patients" are there?

Response: As of May 2006, BHIE has enabled providers access to electronic health information on more than 1.5 million unique correlated (shared) patients. This includes more than 628,000 individuals who are not in the Federal health information exchange patient population at this time.

Question 16: What are the long-term plans for the Bilateral [sic] Health Information Exchange? Will it be retired when CHDR and HDR are fully populated?

Response: The bidirectional health information exchange, known as BHIE, is an integral part of VA/DoD health data interoperability. Currently, VA and DoD have not determined a date when or whether BHIE will be retired. BHIE and CHDR serve different purposes. BHIE is designed to support the real-time bidirectional exchange of text-based health data for shared patients. CHDR, which represents the interface between the DoD clinical data repository (CDR) and the VA health data repository (HDR), is designed to support the real-time bidirectional exchange of computable health data, such as pharmacy and allergy data that can support drug-drug and drug-allergy interaction checking across systems. Together, BHIE and CHDR permit VA and DoD to share more data than would otherwise be available.

There are plans to build upon the success of both BHIE and CHDR in order to accelerate the progress in sharing appropriate health information between DoD and VA. DoD/VA health information technology sharing team has begun working on the CHDR-BHIE interface. The CHDR-BHIE interface will enable DoD to make data from CDR Armed Forces Health Longitudinal Technology Application (AHLTA), which is the DoD electronic health record, viewable to VA on shared patients. The CHDR-BHIE Interface will make the same data elements currently available in BHIE available to the VA from the CDR of DoD's electronic health record system, AHLTA. This will significantly accelerate the number of DoD sites with data viewable by VA for shared patients and the number of DoD sites able to

view VA data. As of June 22, 2006, AHLTA was implemented at 115 DoD sites worldwide. All DoD sites are expected to have AHLTA by the end of calendar year 2006. The CHDR-BHIE Interface is anticipated to be operational in the second quarter of FY 2007. Following this initial implementation, DoD and VA are planning to make additional data elements, such as provider/encounter notes, from the CDR viewable by VA via this interface.

Question 17: What are the most recent short- and long-term goals to exchange "computable" medical information? What are the benefits associated with computable information? Must all of the medical information that will be exchanged be computable?

Response: The current goal for the exchange of computable data is to exchange allergy and pharmacy data for drug-drug and drug-allergy interaction checking between VA and DoD systems. VHA is also evaluating the feasibility of exchanging computable laboratory data. Long-term plans for the exchange of computable data are focused on defining the sets of data that the clinicians want in a computable format.

Data that is computable and standard between systems enable computer-assisted decision support. For example, each system must be able to recognize that a drug called by a trade name on one system is the same as a drug called by the generic name on another system. The same principles apply to laboratory tests, diagnostic codes, etc.

In June 2006, VA and DoD began production testing of the CHDR interface in a live patient care environment using standardized, computable pharmacy and medication allergy data. The William Beaumont Army Medical Center and the El Paso VA Healthcare System exchanged pharmacy and medication allergy data on patients who receive care from both health-care systems. The CHDR interface supports the ability to conduct drug-drug and drug-allergy order checking for these same patients. CHDR represents the first demonstration of interoperability of pharmacy and medication allergy data in a patient care setting between the DoD CDR and the VA HDR.

Not all medical information that will be exchanged will be computable; examples are progress notes, operative reports and discharge summaries. These are text documents that are narrative in nature and contain opinions, treatment plans, conclusions, etc. Images from diagnostic studies will not be computable, although there must be a standard for exchanging and displaying this type of information.

Question 18: GAO has reported that although the agencies have taken action on many of their recommendations, the CHDR effort still lacks a sufficiently detailed project plan. What are the departments doing to develop such a plan and when will it be finalized?

Response: The Department's developed the DoD/VA CHDR interagency project management plan (PMP) that addresses roles and responsibilities, project management, project development, data standardization, project organization, meeting management, metrics tracking/reporting, risk management, lessons learned, documentation, quality and innovation. Associated with the PMP are additional documents such as a CHDR concept of operations and a work breakdown structure with milestones and deliverables. Throughout the course of the CHDR program development, additional documentation such as a risk management plan, interface control documents, quality assurance plan, test plans, and

other documentation have been jointly produced and used. The detailed project plan for CHDR in its current form has been completed.

Question 19: Is HIPAA a stumbling block to data sharing between VA and DOD?

Response: No. VA and DoD have executed a comprehensive data sharing memorandum of understanding (MOU) that explicitly defines the appropriate authorities for sharing protected health information, including medical data. VA and DoD have successfully implemented a series of progressive health data exchanges that are fully compliant with these authorities and apply all appropriate protections to individual health data. These health data sharing exchanges include the Federal health information exchange and the bidirectional health information exchange.

Question 20: The success of VA and DOD efforts to exchange medical information will depend, at least in part, on the departments' abilities to communicate and collaborate effectively. What mechanisms have VA and the DOD put in place to ensure that this happens?

Response: The VA/DoD Joint Strategic Plan, 2006-2008 establishes a leadership framework to promote successful partnerships, institutionalize change, and sustain momentum and collaboration into the future. This framework consists of the Joint Executive Council (JEC), the Health Executive Council (HEC), the Benefits Executive Council (BEC), and other necessary sub-councils or workgroups. The JEC is responsible for developing a plan to increase the exchange of knowledge and information between the Departments, as well as with external stakeholders.

The HEC IM/IT work group, co-chaired by the Chief Information Officer for the Military Health System and the Chief Health Informatics Officer for VHA, provides programmatic oversight for individual, jointly approved and coordinated HEC IM/IT sharing projects. HEC IM/IT Work Group meetings are held monthly to manage overall joint electronic health records interoperability plan (JEHRI), program schedules, accomplishments, and risk, and to review selected individual project cost, schedule, and performance. The HEC IM/IT work group provides routine updates to the HEC to include program status and seeks executive decision approval when appropriate. At all times, the HEC IM/IT work group ensures that program activities remain consistent with the joint strategic goals provided by the HEC.

Question 21: It is reported that VHA is considering making HealtheVet available as open source software. What benefits have been identified in making the current VistA software available to others? What are the pros and cons associated with making the planned system available as open source?

Response: As the result of releasing the VistA product into the public domain, VA has demonstrated a long history of working with other organizations to improve the quality of our health information system. Significant functions such as full screen editors, multi-lingual capabilities and low-cost contingency solutions for critical products such as bar code medical administration have been introduced. These enhancements have both improved the efficiency of the product as well as pushed the use of health information systems throughout the industry.

VA, other healthcare entities, and consumers could potentially benefit from an open-source, or cooperative development approach. Primary benefits to VA include:

- Reduced software development and maintenance costs due to the ability to incorporate enhancements and fixes provided by non-VA users.
- Increased interoperability and secure information exchange with external communities.
- Other healthcare providers and consumers could benefit from the use of VA's award-winning electronic health record.

Drawbacks include:

- VA would have to invest resources to establish governance processes, portals for code sharing.
- Software produced by non-VA entities would have to comply with VA development and documentation standards and undergo rigorous testing before use in the VA environment.

Question 22: It has been reported that the VHA Health System Engineering Design and Development (HSEDD) procurement (which was designed to facilitate the migration from the existing health records system to the new architecture) has been indefinitely delayed. What are the reasons for this delay? What is VA doing to address the issues identified?

Response: Earlier this year, VHA's Office of Information (OI) released two requests for proposals (RFP): (1) VistA Contracting Services (VCS) and (2) Health Systems Engineering Design and Development (HSEDD). The former is a solicitation for continuing support and enhancements to the existing VistA system and is a re-compete of the existing contracts. The latter contract establishes a vendor pool that can compete for design and development work that would transition current applications to a modern, service based architecture. In response to VA direction and to stay within reasonable budget constraints, OI is restructuring our development plans for the VistA/HealtheVet transition. Until a new strategy is approved by VHA, it would be premature to seek industry support and therefore the HSEDD RFP was withdrawn. It will be released again, in FY 2007, but no specific timetable has been set at this time.

Question 23: VETSNET development has been ongoing for at least a decade. What are the major reasons for the delays that have occurred? Is this effort now on track?

Response: In 2002, the Government Accountability Office (GAO) identified several key problems with the VETSNET project. These problems included lack of a project manager, need for a complete analysis of the current systems replacement initiatives including validation of user requirements, and testing of the functional business and end-to-end processing capabilities.

On July 11, 2002, Science Applications Information Corporation (SAIC) was awarded a contract to perform functional and integration testing of the new system. A project manager was appointed as of September 26, 2002 and assessment and validation of user requirements was completed by September 30, 2002.

In May 2004, the finance and accounting system (FAS) and award applications were deployed to the Lincoln Regional Office for beta testing. Beta testing was expanded to the Nashville Regional Office in February 2005. Currently, the two beta sites are processing all original live compensation claims, with disability evaluations from 0 percent to 100 percent, where the veteran has requested payment by electronic fund transfer (EFT) using VETSNET award and FAS. All other regional offices are processing original live compensation claims, with disability evaluations from 0 percent to 20 percent, where the veteran has requested payment by EFT. In addition, all regional offices are able to process all live disability compensation claims where benefits are denied.

In 2005, the Under Secretary for Benefits requested an independent technical assessment (ITA) of the VETSNET project. Carnegie Mellon's Software Engineering Institute (SEI) was commissioned to conduct this assessment, and identified areas of concern. In SEI's final report, published in January 2006, SEI concluded that the VETSNET project should continue, but changes to the overall management of the project are needed. MITRE Corporation (a Federally funded research and development corporation), has been engaged to assist VBA in identifying and executing these changes.

One significant area highlighted by SEI was the need for an integrated schedule and comprehensive release plan to document all actions necessary to complete the VETSNET C&P project. As part of its contract, MITRE Corporation was actively involved with VBA leadership in formulating such a plan. This *Integrated Schedule and Release Plan* was completed in August 2006. Briefings on the plan for VA officials are currently being scheduled and conducted.

Question 24: Part of the reason for developing VETSNET was to provide a modernized architecture that facilitates securing the information processed by the system. What actions, if any, is VA taking to ensure that the current system is secure until VETSNET can be deployed?

Response: As a result of recommendations from the Office of the Inspector General, changes have already been made to the Benefits Delivery Network system. For example, strong security passwords have been implemented. Procedures regarding employee position changes have been strengthened to ensure that an employee's system access rights are reviewed and modified according to their assignments and properly removed upon termination or change in assignment.

The VA Office of Cyber and Information Security (OCIS) regularly monitors real-time workstation and network activity using approved tools. VBA network support centers (NSCs) perform annual audits of security password files at each regional office.

VBA is also in the process of replacing file transfer protocols with secure protocols. In addition, file transfer protocols have been restricted to a limited number of administrative accounts. Only one-way transactions are allowed, which helps prevent a user from sending malicious files to the server.

Other efforts that are underway or scheduled include the following:

- The CIO has established a "Transmission of Privacy Information in Clear Text (TOPIC)" work group to determine classes of data within the VA environment. This effort will be intensified and will focus on developing strategies for implementing controls to protect classes of sensitive information. In the interim, OCIS is working with the Administrations to increase the application of Public Key Infrastructure (PKI) certificates to protect sensitive email transmissions. These will include correcting deficiencies regarding password controls, remote access, and security of critical files. These efforts are expected to complete by February 2007.

- Encryption standards have been developed for VA-controlled laptops as directed by OMB laptop encryption was put on hold pending resolution of litigation. All laptops will be encrypted when returned to personnel. Other encryption guidance was established and disseminated at the end of August 2006.

- VA will upgrade all VA computers to the XP operating system and upgrade peripheral devices as necessary. This effort was included in VA's FY 2007 budget and completion is targeted for the end of FY 2007.

- An extensive effort is underway to improve VA's performance regarding background investigations - with special emphasis on those positions requiring extensive access to sensitive information and computer systems/networks. VA is working aggressively to resolve problems that have existed for some time with background investigations. One of the improvements is the use of the electronic questionnaires for investigations processing (e-QIP), an OPM sponsored system designed to allow electronic completion and submission of all personnel investigation forms to OPM for completion of the investigations. VA is actively involved in the implementation of e-QIP. The current schedule resulted in over 70 percent of VA facilities using e-QIP by December 31, 2006, and 100 percent by March 2007.

Question 25: Was consideration ever given to acquiring a COTS package for the benefits replacement system?

Response: Commercial-off-the-shelf (COTS) products were considered early in the project development but not adopted because VETSNET uses several standard development tools, such as Microsoft Visual Basic and some of IBM's rational products, which are commonly included in COTS products. Since VA had these functionalities available, COTS products did not offer capabilities that we did not have. Also, the VETSNET teams are constantly looking for new technology that will speed development and improve maintainability. COTS products would not provide the level of flexibility they need.

Question 26: Were other government agencies that provide benefit payments contacted to discuss the possibility of using a similar system? Or to discuss lessons learned that could apply to the VETSNET initiative?

Response: No government agencies have been contacted recently regarding the use of existing benefit payment systems. It was determined that VA's compensation and pension systems contain regulatory and procedural business rules that severely limit the usefulness of benefit payment applications from other agencies.

Question 27: What assurance can you give that the Benefits Delivery Network (BDN) will be able to adequately support benefits payment processing until VETSNET is implemented? Are additional actions needed to enable the BDN to continue supporting benefits payments? If so, what are they and what is VA doing to see that they are implemented?

Response: VBA has fully supported efforts to ensure benefit payment processing can continue on the benefits delivery network (BDN) until VETSNET is fully implemented.

The Bull DPS 9000/TA42 was procured in September 2002, along with new tape cartridge subsystems and more robust direct storage devices, to ensure continued operation of the BDN.

In September 2004, VBA migrated to the transaction processor 8 (TP8) database software and upgraded to GCOS 8 SR5002 operating system software.

VBA continues to maintain a staff of highly skilled and knowledgeable BDN information technology specialists at the Hines Information Technology Center. Succession planning to ensure sufficient staff is available to support BDN processing is a high priority within VBA.

Question 28: As recommended by GAO and Carnegie Mellon's Software Engineering Institute, VA is in the process of developing an integrated master plan for the VETSNET initiative. When will this be completed and what scope will it cover? Will this plan include all benefits programs, including education and vocational rehabilitation? If not, how does VA plan to address these?

Response: MITRE Corporation, a Federally funded research and development corporation, has been engaged to assist VBA in addressing the concerns raised by SEI and others. As part of its contract, MITRE Corporation is actively involved with VBA leadership in formulating an integrated master schedule and end-to-end release plan to document all actions necessary to complete the VETSNET C&P project. This *Integrated Schedule and Release Plan* was completed in August 2006. This plan does not specifically address other benefit programs such as Vocational Rehabilitation and Employment (VR&E) and Education. However, we are working with these benefit programs to specifically address their business requirements. This will ensure their successful migration from the BDN while addressing their business needs.

Question 29: What are you doing to address the management issues that the Carnegie Mellon report identified in its independent assessment of VETSNET? Based on the history of this initiative, what is your prognosis for the success of this system?

Response: To address the leadership concerns raised by Carnegie Mellon, the Under Secretary for Benefits appointed an experienced senior executive to provide daily oversight and guidance to the project. This senior executive reports directly to the Under Secretary, and has operational control and oversight of all VBA resources currently applied to the VETSNET project. This will ensure that all actions necessary to complete the project are addressed in a coordinated and consistent fashion.

VBA believes the changes being made to the leadership of the project, and adherence to the forthcoming integrated master schedule will ensure the project is completed successfully.

Question 30: Is there a transition plan for moving from the BDN to VETSNET? If not, when will one be developed? How will you link the integrated master plan with the plan to transition to VETSNET?

Response: The integrated master schedule and end-to-end release plan will address all facets of the VETSNET project necessary to transition from the BDN to VETSNET. This includes not only software development, but also training and roll-out of the system's capabilities, batch processes and system interfaces with third parties, data and management reporting capabilities, and conversion of existing BDN records.

Question 31: Under the Bob Stump National Defense Authorization Act for Fiscal Year 2003, VA and DOD were to develop interoperable pharmacy systems by October 1, 2004. Since this deadline was not met, what actions are you taking to respond to this mandate?

Response: In September 2004, VA and DoD successfully demonstrated the ability to exchange computable pharmacy data in a laboratory environment. During the week of June 26, 2006, VA and DoD began production testing of the Clinical Data Repository/ Health Data Repository (CHDR) interface in a live patient care environment using standardized, computable pharmacy and medication allergy data. Clinicians from the William Beaumont Army Medical Center, using AHLTA, DoD's electronic health record system, and the El Paso VA Healthcare System, using VistA, the VA's electronic health record system, exchanged pharmacy and medication allergy data on patients who receive health care from both health-care systems. The CHDR interface will also support drug-drug and drug-allergy order checking for these same patients. Upon the conclusion of production testing in El Paso VA and DoD will finalize the schedule for enterprise rollout of CHDR pharmacy interoperability capability.

Question 32: What is the VA's role in the development of HealthePeople?

Response: VA uses the term "HealthePeople" to embody the broad range of activities that promote electronic health records, standards and interoperability to improve the health of individuals (non-veterans as well as veterans). VA's role has been to foster and participate in these health related issues/areas, contributing VA's unique knowledge and expertise in order to benefit both veterans and others in the community. Some of the methods to achieve this include actively participating in the adoption of uniform standards throughout the healthcare community, actively communicating our experiences in successfully implementing electronic health records, and distributing VistA software through the Freedom of Information Act.

Questions for the Record
The Honorable Thomas R. Carper
Ranking Member
Subcommittee on Federal Financial Management, Government Information, and International Security

Question 1: As I understand, the VA and DoD are expected to go live with CHDR (pronounced "Cheddar") in the next few weeks, enabling a select amount of patient health information to be exchanged between VA and DoD medical facilities. In your testimony, you stated that the DoD/VA Joint Executive Council provides oversight for the initiative. That's a pretty large responsibility. How does the Council operate and how often does it meet?

Response: The Health Executive Council IM/IT work group, co-chaired by the chief information officers of VHA and the Military Health System, is responsible for the day-to-day management and programmatic planning of interagency data exchange initiatives, including CHDR. The DoD/VA Health Executive Council (HEC), co-chaired by VHA Under Secretary for Health and DoD Assistant Secretary of Defense for Health Affairs, maintains executive oversight for these projects. The HEC reports directly to the Joint Executive Council (JEC), co-chaired by VA Deputy Secretary and DoD Under Secretary for Personnel and Readiness. The JEC establishes a leadership framework to promote successful partnerships, institutionalize change, and sustain momentum and collaboration into the future. The JEC also manages the joint strategic plan (JSP) that contains the performance measures and key milestones for these same projects, including CHDR. The HEC meets bi-monthly while the JEC meets quarterly. At all times, the HEC and HEC IM/IT work group ensure that CHDR and other interagency initiatives are managed according to the JSP goals, objectives and key milestones.

Question 2: Upon request, my office has not received information on the funding levels for VistA over the past three years. Do you have those figures?

Response:

Fiscal Year	Fund Type		
	Non-pay – Equipment & Contracts	Pay - Salary, Travel & Training	Total
2006	$188.8	$262.6	$451.4
2005	$183.0	$254.7	$437.7
2004	$198.0	$254.3	$452.3
All figures in millions			

Questions for the Record
The Honorable Daniel K. Akaka
Committee on Homeland Security and Government Affairs

Question 1: The Department of Veterans Affairs (VA) had demonstrated commendable innovation in incorporating recent advances in Health Information Technology (HIT) to improve patient care and reduce costs. However, some experts believe that information transfers between health care providers have the potential to threaten patients' privacy interests. What has the VA done to ensure that patients' privacy will be protected under HIT efforts?

Response: A core principle in VHA's health-care delivery environment is the security and privacy of personal health information. While the paper copy of the medical record was traditionally treated with systematic handling, tracking, and respect for integrity and confidentiality of the content, charts had the potential to be lost or misfiled. There was also only a single copy with no backup access to the record if it was lost or destroyed by fire or flood. With the transition to the electronic health record and widespread availability of computerized information, security and privacy principles must be diligently maintained; however, security measures in VHA's electronic environment far exceed those that were available to protect the paper records.

VA has a comprehensive program for security of electronic medical records which provides a balance between the need for access to vital clinical information and the maintenance of privacy and security of personal health information. VA has developed and enforces strong, well-publicized security and privacy policies that define and document organizational expectations for use and access to personal health information. The policies address access rights, release of information, special handling of information, Freedom of Information Act processes, retention policies, media sanitization processes, and approved methods for communicating medical information. All employees with access to VHA information technology (IT) systems are required to sign a rules of behavior agreement, which sets the organization's expectations regarding access to information systems and data, general information security, and consequences and sanctions for non-compliance with security and privacy policies.

Physical access controls are implemented to prevent theft, damage, or destruction of the IT systems and data, as well as policies and procedures for media and hard-copy protection and transmission to include printing, copying, storage, release of magnetic media, and disposition of electronic and hard copy. Logical access controls are also implemented across VHA's IT systems to limit users to only the information they need to perform their duties through use of authentication and authorization of user access, menu options, security keys, electronic signatures, and audit logs. These principles are reinforced through security and privacy orientation training that must be completed before access to IT systems is granted, and mandated annual security and privacy awareness training for all VA employees and contractors.

Data integrity controls are also built into the applications' and systems' development lifecycles to prevent, detect, and correct errors, duplications, omissions, and alterations that are both intentional and accidental. Application development and testing environments

utilize mock data for all test environments where real personal identity data is not required, and VA has an established waiver review process for test environments that require the use of real personal health information.

VHA also has implemented a comprehensive backup and recovery strategy that encompasses data centers, local area networks, workstations, telecommunications equipment, environmental systems, and supplies needed for alternate processing sites. Contingency plans are developed and tested on a regular basis, and critical information is backed up on a regular schedule and tested to ensure that the media can be read by the systems and programs.

VA has implemented a data encryption policy to ensure that all VHA computerized stored patient data is encrypted, and that patient information is securely transmitted at all times.

VA has enhanced its information security violation reporting and response requirements with aggressive inquiry and violation resolution procedures. In those instances where security violations occur, root causes are quickly determined, corrective actions are immediately taken and when warrant administrative sanctions applied to those responsible for policy violations.

Question 2: As discussed at the hearing, most VA patients receive health care from a number of providers, in addition to care received from VA. What has VA done to work with these other health care providers to make sure that information exchanged between VA and other providers will be secure and used for proper purposes?

Response: Today, health information exchange is not established between VHA and the private sector. VA and DoD have a robust program of information exchange. The Bidirectional Health Information Exchange (BHIE) supports real-time exchange of electronic health data between VA and DoD where shared patients exist. In addition, the Federal Health Information Exchange (FHIE) supports the one-way transfer from DoD to VA of pre-separation electronic health data for separated and retired service members. VHA has an extensive network of facilities, representing in almost every state/region/locality. Exchanging information requires a single protocol with the associated legal authority, policy, business rules, standards etc., from which to engage the private sector entities. VHA actively supports the Department of Health and Human Services (HHS) Office of the National Coordinator (ONC) to help move the nation towards interoperability that is private and secure. This effort is based upon outcomes of the current national health information technology initiatives, led by HHS/ONC. It should be emphasized that the same standards for security of information exchange, for the purposes of treatment, should also be put in place for surveillance, research, public health and any other health related transfer of information.

Question 3: On February 11, 2005, Office of Management and Budget Deputy Director for Management Clay Johnson issued a memorandum directing each agency to designate a senior official who would have agency-wide responsibility for privacy issues relative to information management. How does VA's privacy officer work with information technology personnel to make sure that HIT efforts will not adversely impact the privacy of patients?

Response: The VA CIO serves as the Department's designated privacy official, the CIO ensures that privacy issues are appropriately addressed during the entire systems development and information management life cycle. He works closely with agency officials and in his oversight capacity he ensures compliance with applicable Federal regulatory standards.

Any VHA requests for IT development that involve patient information are reviewed and assessed by the VHA Privacy Office to ensure privacy requirements are included in the planning and analysis phase of the development cycle. The VHA Privacy Office provides recommendations for ensuring privacy requirements are met in the IT effort. For IT initiatives requiring the collection of personal information on individuals that are being funded, VHA completes a privacy impact assessment (PIA). The PIA is used to assist the IT project manager in determining and addressing privacy impacts.

Question 4: The Office of the National Coordinator for Health Information was established in 2004 by Executive Order 13335, which calls for collaboration between VA, the Department of Health and Human Services (HHS), the Office of Personnel Management (OPM), and the Department of Defense (DoD) to spread the use of HIT. How is VA working with HHS, OPM and DoD in developing HIT infrastructure to ensure patient privacy? What are some best practices found by VA in this regard?

VHA Response: Since May 2004 VHA has worked with HHS, OPM and DoD, primarily through the coordination of the HHS Office of the National Coordinator (ONC) for Health Information Technology. The focus on privacy takes place in the HHS/ONC Federal health architecture (FHA) e-gov activity. The VHA privacy officer is the co-lead on the FHA privacy and security workgroup along with a co-lead from HHS. The FHA privacy and security workgroup is an advisory group with responsibility to recommend target privacy and security requirements, practices, and solutions for health information interoperability across the health line of business (LoB), as described in the Federal enterprise architecture (FEA) business reference model (BRM). The charge of this workgroup may change with the revisions to the structure of FHA. VHA has many best practices however none that can be directly attributed to this effort.

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