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# DEPARTMENT OF VETERANS AFFAIRS ROLE IN THE FUTURE OF ELECTRONIC HEALTH RECORDS

## HEARING

BEFORE THE

SUBCOMMITTEE OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON VETERANS' AFFAIRS
HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

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# CONTENTS

**May 19, 2004**


Page

Department of Veterans Affairs Role in the Future of Electronic Health Records ..... 1

OPENING STATEMENTS

Chairman Buyer ..... 1
Prepared statement of Chairman Buyer ..... 33
Hon. Darlene Hooley ..... 2

WITNESSES

Javitt, Jonathan C., M.D, MPH, Senior Fellow, Potomac Institute for Policy Studies, Member, Subcommittee on Health Care Delivery and IT, President's Information Technology Advisory Committee ..... 4
Prepared statement of Dr. Javitt ..... 35
Koontz, Linda, Director, Information Management Issues, U.S. General Accounting Office; accompanied by: Valerie C. Melvin, Assistant Director, Information Management Issues, U.S. General Accounting Office ..... 12
Prepared statement of Ms. Koontz ..... 41
Perlin, Jonathan B., M.D, Ph.D., MSHA, FACP, Acting Under Secretary for Health, Veterans Health Administration, Department of Veterans Affairs; accompanied by: Robert M. Kolodner, M.D, Acting Chief Information Officer for Health, Veterans Health Administration; and Robert E. Lynch, M.D, Director, South Central VA Health Care Network (VISN 16), Veterans Health Administration ..... 13
Prepared statement of Dr. Perlin ..... 55
Reardon, James C., MS., Chief Information Officer for Military Health System, Department of Defense; accompanied by: LTC Bart Harmon, Deputy Director of Information Management ..... 18
Prepared statement of Mr. Reardon ..... 67

MATERIAL SUBMITTED FOR THE RECORD

*Written committee questions and their responses:*
Chairman Buyer to Department of Defense ..... 75

# DEPARTMENT OF VETERANS AFFAIRS ROLE IN THE FUTURE OF ELECTRONIC HEALTH RECORDS

**WEDNESDAY, MAY 19, 2004**

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
COMMITTEE ON VETERANS' AFFAIRS,
*Washington, DC*

The subcommittee met, pursuant to call, at 10:05 a.m., in room 334, Cannon House Office Building, Hon. Steve Buyer (chairman of the subcommittee) presiding.

Present: Representatives Buyer, Boozman, and Hooley.

## OPENING STATEMENT OF CHAIRMAN BUYER

Mr. BUYER. The Subcommittee on Oversight and Investigations, the Committee on Veterans' Affairs, will come to order. Today's hearing is the VA's role in the development of interoperable electronic medical record systems in the Federal Government. During a recent visit at the Baltimore Veterans Medical Center, President Bush said, quote, "the 21st century health care system is using a 19th century paperwork system,'" end quote. He went on to say, quote, "These old methods of keeping records are real threats to the patients and their safety and are incredibly costly," end quote. The President has proposed $100 million for 2005 for demonstration projects of IT health care. While this subcommittee has held numerous hearings on the importance of moving toward electronic medical records, today's hearing will bring a new element into the discussion. I am referring to the potential savings in health care costs that can be realized by moving from paper records to electronic medical records.

According to Dr. Blackford Middleton, chairman of the Center for Information Technology Leadership, and I quote, "Standardized information exchange would save the Nation $86.8 billion each year. Clearly, we must accelerate efforts to focus national policy discussions on implementing standardized health care information exchange and interoperability," end quote. Dr. Middleton made this statement before the Health Care Information Management Systems Society on February 23, 2004. In fact, we asked Dr. Middleton to be a witness at this morning's hearing. Unfortunately, he was unable to do so, but indicated he would be happy to testify at a later date. Dr. Middleton's statement is a fitting introduction to today's hearing and the important steps that have already been taken to standardize health information.

The VA has played a pivotal role in laying the ground work for setting health information standards to be used across the government. Over the last 2 years the VA has worked with the Departments of Defense and Health and Human Services to build upon the five standards that were announced by HHS on March 21, 2003. More recently on May 6, 2004, the Departments of Defense, Veterans Affairs and Health and Human Services announced the adoption of 15 additional standards agreed upon by the Consolidated Health Information Initiative, which is an integral part of the e-Gov initiatives of the administration. Dr. Jonathan Javitt, a member of the Subcommittee on Health Care Delivery and IT of the President's Information Technology Advisory Committee is our lead witness today. I am sure we all look forward to hearing his perspective in his role as a member of the President's health IT team.

Today's hearing will also focus on the progress that has been made by the VA and DOD in their joint effort to develop and deploy electronic medical records that are interoperable, bidirectional, and standards-based. According to GAO's current assessment of the top five priorities that still need to be addressed in 2004, I was surprised to learn that the basic fundamental progress of program design such as the development of an architecture for the electronic interface that articulate systems requirements, design specifications, and software descriptions have not been agreed upon. I must ask a basic question. Shouldn't these basic functions have been identified before the project got underway?

GAO also cited the need for project milestones and precise performance measures to provide for the basis of comprehensive program management, progressive decision making, and authorization of funding for each step in the development process. Again, I think this is rather basic. Having a business plan with measurable outcomes should be in place in the front end and not the back end of a project. VA and DOD have been working on this initiative since 1998 without these key elements in place. This does not represent good program management.

So after 6 years and $668.7 million, we have a system that is capable of a one-way transfer of information. I am not sure I would categorize this as a great success. I hope you prove me wrong today by telling me you have made substantial progress beyond the Federal Health Information Exchange and that the implementation date for CHCS II is on target.

I will close by saying I believe with thousands of service members returning from Iraq and Afghanistan and other places around the world, they should not have to endure other battles in order to receive timely transition to VA health care and benefits.

At this moment, I yield to the ranking member for any comments she would like to make.

[The prepared statement of Chairman Buyer appears on p. 33.]

**OPENING STATEMENT OF HON. DARLENE HOOLEY**

Ms. HOOLEY. Thank you, Mr. Chair, and I agree with many of your statements. Sweeping national acceptance of electronic health records holds great promise for both patient safety and cost savings. The President clearly showed his commitment to this ongoing

initiative when he recently signed an executive order to direct specific actions. The benefits and pitfalls of electronic recordkeeping and transfer have been explored for at least a decade. Technology has evolved and can be the centerpiece of this pending sea change in health care record management. The President's actions bring this excellent concept one step closer to reality.

The concept itself, however, is not new. Some groundwork for the Federal component of this initiative was established in 1996 with an executive order. President Clinton called for the Federal Government to create a coordinated approach built on existing structures to make measurable improvements in mission performance and service delivery to the public through the strategic application of information technology. Out of this general call for Federal IT integration and cooperation at the very onset of this modern Internet explosion, the former administration called for practices that would protect individuals and enhance government services. There were many examples and pilot projects in the private sector regarding electronic medical recordkeeping that has held much promise. The VA-DOD Health Resources and Emergency Operation Act of 1982 continue to provide authority for a myriad of sharing-related activities between agencies.

In the late 1980s and early 1990s, there were several initiatives to facilitate electronic health care transactions related to Medicare. Many of these initiatives later were signed into law, becoming part of the Health Insurance Portability and Accountability Act of 1996, or HIPAA. Subtitle (f) of HIPAA is entitled "Administrative Simplification." It amended the Social Security Act, title IX, by calling for development of an electronic system for processing health care information consistent with the goal of improving the operation of overall health care systems. This and the creation of certain standards for record security was the harbinger of things to come.

The recent focus takes additional steps to build upon earlier guidelines and to establish an executive branch coordinator to facilitate this worthy effort.

Thank you, Mr. Chair. And I yield back the balance of my time.

Mr. BUYER. Mr. Boozman.

Mr. BOOZMAN. I don't have an opening statement. I appreciate you and the ranking member, though, having this hearing, and the staff. I think it is a very, very important subject that we need to devote a lot of time to.

Mr. BUYER. By way of a procedure, Ms. Koontz, unless you have an objection, what I prefer to do is take Panel II and Panel III and combine them. It will be more efficient with our time. And if there are any cross questions, we can handle it all at once with VA and DOD. Is that fine with you?

Our first witness is Jonathan C. Javitt. He is a senior fellow at the Potomac Institute for Policy Studies, a member of the Subcommittee on Health Care Delivery and IT, the President's Information Technology Advisory Committee. We will operate under the 5-minute rule. If you have a written statement——

Dr. JAVITT. My written statement has been submitted.

Mr. BUYER. It will be submitted for the record. Hearing no objection, so ordered.

Mr. BUYER. You are now recognized for your comments.

Dr. JAVITT. And Mr. Wu had asked me to prepare 10 minutes of verbal comments in his letter, if that is okay with you.

Mr. BUYER. If Mr. Wu said so, I suppose we should. I will change seats with you, Mr. Wu. I will yield to the direction of Mr. Wu.

Mr. BUYER. You are recognized for 10 minutes.

**STATEMENT OF JONATHAN C. JAVITT, M.D, MPH, SENIOR FELLOW, POTOMAC INSTITUTE FOR POLICY STUDIES, MEMBER, SUBCOMMITTEE ON HEALTH CARE DELIVERY AND IT, PRESIDENT'S INFORMATION TECHNOLOGY ADVISORY COMMITTEE**

Dr. JAVITT. Mr. Chairman, members of the committee, distinguished staff and guests, thank you for inviting me to testify before you today. My name is Jonathan Javitt. I am a physician who has been active in pioneering applications of medical records since 1982. It has been my honor to chair the Health Subcommittee of PITAC, the President's Information Technology Advisory Committee, which is a bipartisan panel of experts that serves the Executive Office of the President and was established by the High Performance Computing Act of 1991 as amended by the Next Generation Internet Research Act of 1998 and subsequent executive orders.

By way of disclosure, although I serve under a Presidential commission and I am appointed as a special government employee of the Under Secretary of Defense, as Congress ordered, I asked to serve without compensation.

As you know, PITAC operates under the Federal Advisory Committee Act and therefore is in the process of finalizing its report to the President on transforming health care through information technology. Although the draft recommendations of this report have been presented in their public meeting and posted to our Web site, they will not be formally adopted until our next public meeting. Therefore, any testimony I give before you today, while consistent with those recommendations, is based on my own experience and observation and is not the formal recommendation of PITAC.

You have asked me to provide you with testimony on potential savings associated with electronic medical records both in human and economic terms. In short, the answer is that we know the savings are there, but those savings have not been consistently measured in a manner that can be used to score Federal initiatives to computerize our health care system under the budgetary rules agreed to by the executive and legislative branches of our government. I have spent sufficient time talking to leaders within the Congressional Budget Office, the Office of Management and Budget and the President's Council of Economic Advisors to be certain in this testimony. Moreover, it is my belief that agencies and programs under the direct purview of this committee have the potential to provide us with critically needed information on this subject that will inform future public policy in arenas that go far beyond the immediate focus of this committee.

In using the appellation "electronic medical records" or EMR, it is critical to distinguish between EMR in isolation or EMR as shorthand for electronic health environment that includes not only

the basic recordkeeping system but also computerized order entry and decision support tools to prevent medical error within an environment that shares patient data among the caregivers who must coordinate the care of a given patient, including those in doctors' offices and clinics, hospitals, laboratories and pharmacies. An electronic medical record without those features may offer convenience and work flow advantages in the local practice setting, but does not inherently improve care or offer the potential to reduce costs of care any more than a well-maintained paper chart.

My experience in this area is both academic and practical, having been a founder and developer of commercial enterprises that offer electronic medical record systems and computer-aided decision support systems that are now used in the care of millions of Americans.

I have also had the opportunity to visit and evaluate in considerable detail the electronic health environment of the Veterans' Health Administration and the Department of Defense. There is no question today that a properly constructed e-health environment is directly associated with preventing medical error and reducing avoidable death and suffering. We all quote the Institute of Medicine's findings that suggest over 98,000 annual deaths from medical error. It is critical to remember that the errors studied were primarily errors of commission rather than errors of omission and errors that were committed only in the inpatient setting. Thus the IOM may only be talking about the tip of the iceberg. We know that one in five laboratory tests is performed in the United States because the results of previous tests are not immediately available at the point of care when crucial clinical decisions must be made. We believe that one in seven hospitalizations occur because critical information about patients has not been transmitted from caregiver to caregiver. Moreover, we know that one in eight physicians' orders is not carried out as written when we rely on traditional paper-based systems. It is time we stop delivering 21st century care using administrative methods that were established when Hippocrates entered medical practice more than 2,000 years ago.

The outstanding work of Drs. Clem McDonald in Indianapolis, Blackford Middleton and David Bates in Boston, Brent James in Utah, to name just a few of the pioneers in this field, has amply demonstrated that errors are prevented, hospital costs are avoided, and lives are saved when modern computer technology is added to the practice of medicine. There are simply too many bits of information for the human computer, the human mind, to track perfectly, particularly when patients are cared for by multiple doctors. Case studies, including those of the Health Information Management Systems Society, document internal savings within health care enterprises when electronic health records and attendant technologies are introduced. However, there is broad consensus within the health care world that much of the savings associated with such investment devolves to the benefit of those who pay for health care and to society as a whole rather than to the providers who must make the investment.

Estimates of national savings achievable through the universal application of electronic health records and related technology range from $80 billion to $350 billion annually. Figures of this

magnitude make inherent sense to executives of other major industry sectors who have seen more than a 30 percent reduction in administrative costs by getting the paper out of their systems. An airline executive recently remarked to me that if Americans can check in for 45 percent of their flights over the Internet, why are they filling out clipboards in the doctor's office? A similar reduction in the cost of medical care would free up sufficient resources to insure every uninsured American lower the cost of care to working families, and pay for our new Medicare prescription drug bill without raising taxes, premiums, or user fees. We must recognize that as medical technology advances, so too will the clinical costs of care. The only place to save substantial cost is through the use of computer technology to simplify the administration of care and reduce the occurrence of error.

The problem is that while we have outstanding cost effectiveness data from the hospital perspective, we have almost no data that measures savings from the economic perspective of the payer. The Veterans' Administration has some macroeconomic observations that suggest they are providing care to twice as many people with only 30 percent more money than they were a decade ago. They attribute that in part to their outstanding computerization issue.

I have recently completed a clinical study on the value of computer-aided decision support from the payer's perspective together with colleagues at Active Health Management, an enterprise that gathers simple electronic health information on behalf of nearly 5 million Americans and alerts physicians to potential opportunities to improve care. That study, which covered 40,000 insured residents of a midwestern city, demonstrated an 11 percent reduction in hospital admissions and more than 5 percent reduction in overall cost of care. The study is expected to be published shortly. Unfortunately, I know of no other data generated at the level of scientific reliability that we require for other health care investments in which the introduction of e-health technologies is associated with clear savings to the payer.

I believe that compelling proof of savings from the payer's perspective is essential for generating the next level of Federal investment that will be required to computerize our Nation's health care system. For such investment to be made, savings must be scoreable within the budget rules established by the executive and legislative branches of government. Otherwise, such investment will require the raising of additional taxes or expansion of the Federal deficit. This is particularly true since government, in one way or another, pays for 57 percent of health care in the United States when one tabulates the cost of Medicare, Medicaid, the Federal employees' program, military and veterans' programs, and the corporate tax deductions associated with employer-sponsored health insurance. The good news is that if we make the investment, the resulting savings are likely to enable us to do with our health care system what we know we must do in order to preserve the quality of care for all Americans.

The Veterans' Administration has not focused on measuring the cost effectiveness of its extraordinary investment in electronic health records, but with your committee's encouragement, it could team with expert health economists and demonstrate to the entire

country how critical that investment has been and will be in the future. This is not a criticism of the VA. Their mission is providing for America's veterans, not doing health economic research. In this case, however, their experience is vital to informing much broader public policy. I urge you to encourage them to embark on this research and assist them in gathering any required research expertise from other departments in government.

The U.S. Army has demonstrated some extraordinary health benefits through its Health*e*Forces program at Walter Reed Army Medical Center and other collaborating hospitals. Health economic analysis of that work, perhaps in collaboration with expert organizations such as the Agency for Health Care Research and Quality and HHS, would likely provide proof of savings that are critically needed as we address the question of how to computerize this Nation's health care system. The potential savings to military and veterans' health care alone, an area of deep interest to your committee, gives you a compelling interest in the computerization not only of care provided by those departments of government but of care contracted for in the civilian sector by those departments of government. I am confident that if we are able to measure the savings and thus make the investment required to computerize the civilian sector of our health care system, we will secure the viability of that system for future generations.

Thank you very much for inviting me.

[The prepared statement of Dr. Javitt appears on p. 35.]

Mr. BUYER. Thank you very much.

Dr. Blackford Middleton, chairman of the Center for Information Technology Leadership, provided the subcommittee with CITL's estimate on potential savings that could be realized by standardizing health care information exchange. This organization estimates that the cost savings would be in the neighborhood of $86.6 billion annually. Do you agree this is a fair estimate?

Dr. JAVITT. If anything, I think Dr. Middleton's estimate is modest. It is certainly consistent with earlier estimates in the President's economic reports to Congress. The challenge is that those analyses have not been made based on economic studies that really separate the savings to the payer from the savings to the delivery system. For instance, if you implement a computerized order entry system that prevents medical error, and that medical error on average extends hospitalization by 2 days, while under prospective pay, that is, you know under CMS rules, that extension of hospitalization cost is generally borne by the hospital. Under private payer systems, that extension may be borne by a private insurer. Until those different economic savings are disentangled from one another, it is difficult or, more likely, impossible for organizations like the Congressional Budget Office or the Office of Management and Budget to apply proper scoring to those savings and recognize that the investments we will make in health information technology have offset in savings in the Federal budget for years to come.

Mr. BUYER. When I look back on the numerous hearings we have held on this issue, I have a strong sense that there is a mixed opinion with regard to the impact of HIPAA as we try to achieve this seamless medical record between VA and DOD. Would you care to comment?

Dr. JAVITT. HIPAA is certainly a challenge, and partly a challenge because the application of the law is still in evolution. Probably the most important thing to recognize about HIPAA is that anything that is done with an individual's data for his or her benefit is something that HIPAA welcomes. To the extent that people consent and ask for their information to be moved from one side of care to another, there should be no challenge under HIPAA whatsoever.

Now, it may be that DOD and VA create unique challenges under HIPAA and it is an area where either, you know, legislative action or specific rulemaking is necessary to say that these things are necessary for the interest of the patient, that this transfer of data is used only for the benefit of the patient; and HIPAA barriers, whatever barriers they are, simply need to be relaxed.

Mr. BUYER. I am receptive to your testimony. I think Congress will be responsive. I believe the VA committee, along with some of our colleagues—I can't speak for all of them on the Armed Services Committee—will believe that as we try to make this a seamless health system, it is counterproductive for individuals within the bureaucracies to make decisions that would express that the Army is one institution, the Air Force is one institution, the Navy and Marine Corps is one institution, the DOD is one institution and the VA is one institution. That doesn't seem to fit our overall goal here of a soldier transitioning within the government's health care systems. So I welcome your statement.

I have heard you talk about Health*e*Forces. Is that another name for CHCS II, or what is that?

Dr. JAVITT. Health*e*Forces is an initiative that has grown up within the caregivers of several branches of the military—the Army, the Navy and the Air Force—and it is worth noting that a lot of what we like so much about the VA's current system is the direct result of innovation of frontline caregivers, doctors and nurses who saw problems and addressed them. For instance, the bar code system that the VA uses for administering medications only exists because a VA nurse checked in at a rental car at an airport, saw the rental car waved in with a bar code and said, why can't we use that to make sure medicines are properly administered?

Well, Health*e*Forces is an initiative that you can see up at Walter Reed Medical Center. And I should tell you that my wife works there as a radiologist, so I have invested a lot in Walter Reed. What they have done is built an extraordinary system for the management of people with chronic illness. Extraordinary to the point where they have won national awards, which is how I came across them. They have won eight different certifications from the Joint Commission of Accreditation of Hospitals. And they are demonstrating every single day that they can produce results for people with diabetes in terms of lowering their blood sugar, for people with cardiac disease in terms of lowering their cholesterol, that are unprecedented in the civilian sector. They are doing it by using direct computer interaction not only with doctors, but handing the patients computerized boxes to fill out their own information and engage the patient. They are showing on a daily basis that fewer

people are going to emergency rooms as a result. So it is exactly the kind of initiative that I hope will be encouraged in the future.

Mr. BUYER. Good. Ms. Hooley, you are now recognized.

Ms. HOOLEY. I am going to follow up on that question. Thank you for that testimony. Is that only at Walter Reed that that is being done?

Dr. JAVITT. I know for a fact that there are complementary initiatives under that HealtheForces umbrella at Madigan, and I have talked with the brigadier general who is overseeing that. I have heard that there are similar initiatives used in the same body of computer code within the Navy and within the Air Force. And even more significantly, that technology is being directly transplanted to West Virginia in service of chronically underserved populations.

Ms. HOOLEY. As I am going through your testimony, you talked about that you believe that we need compelling proof of savings from the payer's perspective. How do we get compelling proof?

Dr. JAVITT. One of the treasures in the U.S. Government is the Agency for Health Care Research and Quality. We have staff within that agency that are as good as the health economists anywhere in the universities. We have brilliant health economists at many of our leading universities. Once upon a time, I even got to be one of those people. If we were to say this is a priority that has to be measured because we cannot prioritize our investments appropriately without measuring it, we will have very important answers within a year or two.

Ms. HOOLEY. We need to make that.

Dr. JAVITT. That has to be made, because within the government as I see it as an outsider, there is no ready mechanism for the Department of Veterans Affairs or DOD to go over to HHS and say let's measure this together.

Ms. HOOLEY. What do you think the cost reduction can be when electronic health records become an integral part of health care?

Dr. JAVITT. My personal belief is that 25 percent of the cost of care could be saved, enough money to insure every uninsured American, enough money to pay for Medicare Part D.

Ms. HOOLEY. What is the focus of the standardized data entry efforts across the Federal health care system? What is the status of standardized data entry efforts across the Federal health care system? You talk about VA. Where are we on standardizing those data entries?

Dr. JAVITT. It is not a question that I have studied in the same detail that I have studied some of the other things that I testified about this morning. At the same time, my observation is that we are well on our way. The very fact that we have committed to doing it and that we have made it a priority is a major leap forward compared to where we were even 3 years ago.

I think it is important to take a look of where we are as a country compared to other countries. I just spent the weekend in Geneva at an international conference where somebody who works directly for Prime Minister Blair basically said, well, we are investing $10 billion to computerize the health care system for 50 million English people. What is wrong with you Yanks? The truth is we have spent a lot less. And if you take a look at what VA and DOD have put together, we have got a computerized health environment

that begins to cover more than 30 million people. And if we can leapfrog on that technology—yes, we need standards, but if we can respect what we have already done and recognize what an extraordinary national asset it is, far beyond the value that it provides just to VA and DOD, we have the potential to demonstrate within a year, 2 years, 3 years, that the United States is really leading the world in this area.

Ms. HOOLEY. Another quick question. Privacy, how do we make sure that our medical records have some kind of privacy built into them?

Dr. JAVITT. There are a couple of levels to that answer. If you take a look at some of the draft findings of PITAC's report that is going to be finalized in the near future, Professor David Staylan from MIT has offered some very technical guidance on the privacy issue. The most important aspect of privacy is for the patient to know that the record is the patient's record and nobody else's. What they found in the private sector is that the best way to protect patients' privacy is simply to track who accesses that record and to tell the patient who has accessed that record, because when the patient says, wait a second, I never heard of that person and I don't know why that person accessed my record, if it turns out the access was unauthorized, we have ample disciplinary means to address unauthorized access.

Ms. HOOLEY. Thank you.

Mr. BUYER. Mr. Boozman.

Mr. BOOZMAN. How much did you say that England was going to spend?

Dr. JAVITT. England is planning on spending $10 billion to computerize the English national health system from the top down.

Mr. BOOZMAN. In your opinion, we have the two largest Federal bureaucracies. If you took out the turf battle, how long should it take this thing where we have a HIPAA-compliant system where they talk to each other?

Dr. JAVITT. Let me separate the question of HIPAA from the talking-to-each-other question. On a technical level you could have these systems talking to each other within a year and it would be the most exciting computer project that was done in the Western world. On the HIPAA level, it may be people may need to carefully look at the act and look at their needs and come to Congress and say, here is what we want to do and we need you to tell us that it is okay for us to do that; because if you just have, you know, lawyers whose job it is to protect their departments, continually looking to do so, you may never get to the answer you need. But if we focus on the patient's interests and the fact that it is our job to secure the record for the privacy of the patient, I am sure there is a solution that can be achieved.

Mr. BOOZMAN. You are saying we might need to tweak the act a little bit to accomplish the task?

Dr. JAVITT. It might be tweaking the act or maybe tweaking some of the rulemaking that has been done around the act to define VA and DOD as business associates of one another.

Mr. BOOZMAN. I think you are totally right, and we need to look at that, and that is something we can do. If you had a magic wand and you could, you know, wave and identify other obstacles, what

are three or four other things that are lurking out there that perhaps we need to do to make this thing happen?

Dr. JAVITT. One person's obstacle is another person's opportunity. One of the challenges we see, you know, coming down the road, is although CHCS II is focused on the outpatient setting, the DOD still needs an inpatient computer system, and the VA happens to have a very good one. At the same time, the VA has within its system relied on free-form clinical notes. And it is sometimes difficult to extract structured information from those free-form notes. That is an area where the Department of Defense has made some considerable investments and has shown some progress. So there is really an opportunity for cross-fertilization.

The third and I think the largest opportunity is in the area of management of chronic diseases. Those are the patients with the biggest needs. Those are the patients that cost the system the most money. And that is where the Health*e*Forces progress at Walter Reed and the other military treatment facilities shows so much promise, because if you take a look at the Medicare budget, the single biggest block of expense in Medicare is caring for people with chronic illness. Medicare talks about how can we implement disease management programs that will save lives and keep people out of the hospital and living longer and will decrease our costs of care? Well, it turns out within our military, we have invented some powerful tools that are unmatched anywhere in the private sector.

Mr. BOOZMAN. Thank you.

Mr. BUYER. Do you have any further questions?

Dr. Javitt, I would like to thank you for your contributions, not only serving on the President's task force, but I can understand why you were a member, and I appreciate the work you put into your statement today and your contribution in moving this issue.

We have been on this issue for numerous years. We are not going to get this accomplished overnight. These are very large bureaucracies that we are having to deal with and patience is required. It drives me crazy. But it is required to work through these very difficult systems.

And my only final comment would be, I will look more into the Health*e*Force initiative out of Walter Reed, because you also, in order for that to have been created at Walter Reed, you have some bright individuals who lack the patience with regard to bringing your system online. And I am willing to take a look at what they are doing. So I will have that discussion with Mr. Reardon of the next panel, but thank you for your contribution. The country appreciates it.

The next panel, we have Linda Koontz will come forward, the Director of Information Management Issues, U.S. General Accounting Office. And we are going to bring Panel III forward, the Honorable Jonathan B. Perlin, Acting Under Secretary for Health, Veterans' Health Administration, Department of Veterans Affairs; and Mr. James C. Reardon, the Chief Information Officer for the Military Health System, Department of Defense.

Mr. BUYER. Ms. Koontz, I will open with you. And if you would, please recognize who is accompanying you.

**STATEMENT OF LINDA KOONTZ, DIRECTOR, INFORMATION MANAGEMENT ISSUES, U.S. GENERAL ACCOUNTING OFFICE; ACCOMPANIED BY: VALERIE C. MELVIN, ASSISTANT DIRECTOR, INFORMATION MANAGEMENT ISSUES, U.S. GENERAL ACCOUNTING OFFICE**

Ms. KOONTZ. This is Valerie C. Melvin, who is assistant director at GAO for this work at VA and DOD on information technology.

Mr. BUYER. You are now recognized.

Ms. KOONTZ. Mr. Chairman and members of the subcommittee, I am pleased to participate in today's continuing discussion of electronic health records and the Department of Veterans Affairs and Department of Defense's actions toward developing the capability to electronically exchange patient health information.

In the face of terrorism, related military responses and a general call for improved health care delivery, providing readily accessible medical data on Active-Duty personnel and veterans is more essential than ever to ensure these individuals receive quality health care and assistance in adjudicating any disability claims that they might have. The President's recently announced proclamation to provide electronic health records for most Americans within the next 10 years further highlights the significance and potential contributions of the Departments' actions in pointing the way toward the delivery of more effective health services.

Since we testified in March, VA and DOD have been continuing with activities to support the sharing of health data. Nonetheless, achieving the two-way electronic exchange of patient health information as envisioned in the Health*e*People (Federal) strategy remains far from being realized. Each department is proceeding with the development of its own health information system, which are critical components for the eventual electronic exchange capability. The departments are also proceeding with the essential task of defining data and message standards.

In addition, a pharmacy prototype initiative begun this past March is ongoing. VA and DOD have told us that the prototype is an initial step in an incremental approach to defining the architecture and technology needed for the two-way data exchange. However, the Departments lack a strategy explicitly defining this incremental approach and how the prototype will contribute toward determining the technical solution for achieving Health*e*People (Federal). As such, there continues to be no clear vision of how this capability will be achieved and in what time period.

Compounding the challenge faced by the Departments is that they continue to lack a fully established project management structure for the Health*e*People (Federal) initiative. As a result, the relationships between the Departments' managers are not clearly defined, a lead entity with final decision making authority has not been designated, and a coordinated comprehensive project plan that articulates the joint initiative's resource requirements, time frames, and respective roles and responsibilities of each Department has not yet been established.

In discussing the need for these components, VA and DOD program officials stated this week that the Departments have begun actions to develop a project plan and to define a management structure for Health*e*People (Federal). However, until these actions are

completed, the progress that VA and DOD has achieved is at risk of compromise, as is the assurance that the ultimate goal of a common, exchangeable two-way health record will be reached.

Given the importance of readily accessible health data for improving the quality of health care and disability claims processing for military members and veterans, we currently have a draft report at the Departments for comment, in which we are making a series of specific recommendations for addressing the challenges to successfully achieving the electronic two-way exchange.

In summary, Mr. Chairman, VA's and DOD's pursuit of various initiatives to achieve the electronic sharing of patient health data represents an important step toward providing more quality health care for Active-Duty military personnel and veterans. Moreover, in undertaking Health*e*People (Federal), the Departments have an opportunity to help lead the Nation to a new frontier of health care delivery.

However, the continued absence of an architecture and defined technological solution for electronically interfacing their new health information systems, coupled with the need for more comprehensive and coordinated management of the projects supporting the development of this capability, elevates the uncertainty about how VA and DOD intend to achieve this capability and in what time frame. We are encouraged by the Departments' recent representations that they are taking actions to resolve these issues. However, until these actions are completed, the Departments will continue to lack a convincing stand regarding their approach to and progress towards achieving the Health*e*People (Federal) goal, and ultimately, risk jeopardizing the initiative's overall success.

That concludes my statement and I will be happy to answer questions at the appropriate time.

[The prepared statement of Ms. Koontz appears on p. 41.]

Mr. BUYER. Dr. Perlin, will you please recognize who is accompanying you at the table?

**STATEMENT OF JONATHAN B. PERLIN, M.D, Ph.D., MSHA, FACP, ACTING UNDER SECRETARY FOR HEALTH, VETERANS HEALTH ADMINISTRATION, DEPARTMENT OF VETERANS AFFAIRS; ACCOMPANIED BY: ROBERT M. KOLODNER, M.D, ACTING CHIEF INFORMATION OFFICER FOR HEALTH, VETERANS HEALTH ADMINISTRATION; AND ROBERT E. LYNCH, M.D, DIRECTOR, SOUTH CENTRAL VA HEALTH CARE NETWORK (VISN 16), VETERANS HEALTH ADMINISTRATION**

Dr. PERLIN. Good morning, Mr. Chairman. Thank you for the privilege of being here today. I am pleased to recognize Dr. Robert Kolodner, VA's Acting Deputy CIO for Health, and Dr. Robert Lynch, Director of Veterans' Integrated Service Network 16.

Two weeks ago, President Bush outlined an ambitious plan to ensure that most Americans have electronic health records within 10 years. At the Baltimore VA, the President noted a range of benefits possible for use of information technology including improved health care quality and reduced frequency of medical errors. Over the past several years VA has worked with Federal, State, and industry partners to broaden the use of information technology and health care. His efforts have laid the groundwork for the Presi-

dent's initiative. Electronic health records are appealing for a number of reasons, but the most compelling reason to use information technology is that it helps us provide better, safer, more consistent and more efficient care for all patients.

VA, as you heard from Dr. Javitt, is a recognized leader in the development and use of electronic health records and other information technology tools. In the mid-1990s, VA embarked on an ambitious effort to coordinate and improve care delivery through implementation of a Computerized Patient Record System, or CPRS. CPRS has now been implemented in all VA medical centers and providers can access patient information across multiple sites of care including inpatient, outpatient, the ICU, the emergency room, the OR, long-term care settings and across all clinical disciplines, nurses, pharmacists, doctors, et cetera. It provides a single interface to which providers can update a patient's medical history, submit orders, and review test results and drug prescriptions. Today, in fact, against the backdrop of only 8 percent of all orders nationally being entered electronically by the prescriber, 93 percent of VA's orders are entered electronically.

Sir, I could go on with the statement, but the proverb that a picture is worth a thousand words is, I think, appropos and I would like to—(and I spoke with Mr. Wu about using our full 10 minutes)—bring you the actual electronic health records. I am going to show you a few screen shots and then the actual health record. (Demonstration of VA's Electronic Health Record begins)

This is the interface that the provider sees. It has, of course, the patient's name. It is a familiar environment that looks like a chart. At the top left are active problems, so it is very easy to know what the issues are the patient faces. There are lists of allergies right in front of the provider so one is aware of those. In fact, the allergies themselves can be looked at in greater detail. Active medications are there, as are clinical reminders.

Dr. Javitt mentioned the importance of treating chronic disease, and these reminders ensure that evidence-based care provision is not left to chance. Recent lab results are available, as are the vital signs. If the patient comes in and a nurse checks the patient's vital signs, those are entered. The physician or other care provider doesn't have to reenter those. There are also the visits, recent visits that have occurred and also visits that are about to occur. At the bottom of the screen are tabs for sections, including: Cover sheet, problem list, list of medications, orders, notes, consults, summary, labs and reports. This constitute a very familiar chart-like metaphor.

This is an example of the electronic health reminder. They are time-sensitive in the sense that every patient over a particular age has to get a flu shot; and sensitive that a year has transpired. They are also context-sensitive, it knows that a patient is older, and knows that a patient has diabetes. It links, behind the scenes, that best evidence with the reminder with one click for the action, with natural language documentation generated by that one click. So, we increased our rate of vaccination over the last 7 years from 29 percent to well above the national average of 54 percent, to a national benchmark of 90 percent, supported with the standardized

data to ensure that we measure and hold ourselves accountable for that performance.

We implement the VA-DOD guidelines. I am really proud of the work between the two agencies. This is for screening for elevated cholesterol. Here it shows the bad cholesterol, the LDL in the okay range; it's 58. Liver functions are okay. Important if you are going treat elevated LDL. So for this patient—I would be prompted to screen. If I order a lipid panel, it would "fire up" the automatic order engine to order the laboratory test. Now all I have to do is accept the order. In fact the next time, in a structured note, it actually places the bad cholesterol data. This time it is 145. Not good. We could leave treatment to chance, but in point of fact, it actually fires up this elevated lipid reminder. And the next time it says, DOD/VA recommends goal of less than 100 for people with established disease. Look, it is 145. The LFT, the liver function tests, are okay. Do you want to treat? And not just treat; treat with our formulary flavor, the evidence-based medication, and one that costs the taxpayer less with best effect. With one button click, an automatic engine for computerized provider order entry, reduces errors at that critical point, eliminating transcription errors, drug interactions, drug allergy interactions, and accepts the order.

And in fact, as I mentioned, 94 percent of all such orders in VA are electronic. Inpatient medications are delivered to the patient with bar coding. Absolutely every medication gets this bar-coded label, be it IV or a dose in a blister pack. The nurse, securely logged into the system, scans the medication, scans the patient's risk band bar code, assuring that it is the right medication in the right dose at the right time, administered to the right person. Anything else triggers an alert.

What about the outpatients? Well, there are 200 million 30-day equivalents, that go to one of seven national consolidated mail-out patient pharmacies that have helped us not only achieve near 6 sigma level of performance (6 sigma is 3.4 failures per million.) Most of medicine, like the very proud results on the flu vaccine, is operating at 1½ to 2 sigma. This was a failure rate of 7 per million, which is unprecedented. And as you know, we have held our pharmacy costs near constant. They have actually been 8½ percent up—not annually—cumulatively over 54 months despite more medications per person, more "branded" drugs, with advances in antipsychotic therapy and diabetic therapy, and higher ingredient costs, to increase efficiency with this mechanism.

Enough of just looking at that. But this is actually the real system. These are real data. The names have been changed to protect the patient's identity. And I will show you two were patients. This is an actual chart. If I was seeing this patient in clinic, I might look at his blood pressure. We could talk about his blood pressure going up. I might have a dialogue as we are looking together at his chart and say hey, the weight is up, too. Maybe we have an opportunity! But this patient comes in extremely sick, and in fact I might want to look at past notes. And by the way, any note that has an icon here has an image associated with it. I might want to look at past hospital records, discharge summaries. And, importantly, if this individual had been treated at another VA or we had data from DOD, if this patient had been seen at an MTF and sepa-

rated, I would be able to access those data through a function that I use in the care of patients at Washington VA either from other sites in the VA system or from DOD with their data coming across through the Federal Health Information Exchange.

This patient is very, very sick. And in fact he is having a GI bleed and I might want to look at his blood level to see how much blood he has lost. So I will call up his hematocrit, which tells us how much blood he has on board. It shows me the normal ranges here. And we can see he has been anemic for a long time. There have been some catastrophes in the middles. Probably had a GI bleed there, but let's go in and find out if he had any transfusions before. In fact, just blow that chart up and in fact, yes, he did bleed down. He was transfused up there, bled down again. Let us make a diagnosis. Let us take care of this patient.

This information would be available to me in the outpatient clinic, the emergency room, importantly to the surgeons who were in the OR. By the way, we have the patient's picture, so I don't have to heartlessly yell hey, Mr. Smith. I can go out and introduce myself and say, Mr. Smith, I am Dr. Perlin; why don't you come back? Or for a patient who is an inpatient who has cognitive impairment, we would recognize that patient at all times.

This patient is very sick, and I will show you what is going on. He is having a GI bleed. Sorry for the bloody before-lunch graphic. But he has diverticulosis and a bleed. But we already know he is bleeding so that doesn't help us. Let me show you how this diagnosis was actually made. And this is a bleeding study that can be seen at my desk, in the emergency room, or, by the way, if I were at home, and if this were my patient, and I were being asked to comment on this, I might look at the studies that have been done. Here's a bleeding study. And here is the aorta and the blood vessels and the vasculature and I want to look at—this one looks a little suspicious, so I might take a closer look and blow that up a little bit. And wow, that is really fuzzy there. And in fact that tells me with absolute clarity that that is where bleeding is. This bleeding was stopped for this patient by inserting a catheter right there and stopping that bleeding.

I am going to show you one other patient, using one of the newer technologies that is available to us. This is Mr. Green—we will call him Mr. Green—who comes in with chest pain. And thanks to Dr. Fletcher in our audience, we have 20 years of EKGs and all of that sort of information; over 15 years' of pacemaker information. But most recently, the cardiologist and cardiac surgeon were working together to actually look at this patient. In point of fact, would have his cardiac catheterization data. We would have a full cardiac catheterization on this patient and we would be able to look at all of the images of his blood flow. And I would have this in the emergency room. Importantly, the cardiac catheterization doctors would have this and the surgeons would have this information if need be.

In any event, I want to stop with that aspect of what I showed you and return to why we believe this is so critically important. It is obvious, I think that you have seen through this short demonstration why this is recognized as one of the Nation's most sophisticated electronic health record systems. We are absolutely committed to the National Health Information Infrastructure,

which recognizes the importance of data and communication standards in developing a comprehensive network of interoperable health information systems, in large part based upon the adoption of common standards. With updated standards, we may be able to exchange health information much more effectively than we do now by transferring—copying paper records which are only available to one user at a time and only in one location.

We are instrumental in the formation of the Interagency Consolidated Health Initiative. And we work closely with DOD and HHS on related projects which helps to establish Federal interoperability standards related to health care. The group has endorsed 20 communications and data standards in areas such as lab, radiology, pharmacy encounters, diagnosis and nursing information. VA and DOD have in fact developed a joint strategy to ensure development of interoperable health records by 2005.

The joint health record plan provides for the exchange of health data and development of the health information infrastructure and architectures supported by common data, communications, security and software standards in high-performance health information systems. It will put us on the path to one virtual health record accessible by authorized users in both agencies.

The first phase of the plan, the Federal Health Information Exchange project, was deployed in 2002 and that was what I alluded to in the remote data view and what I just showed. The next phase of electronic health records plan is the joint development and acquisition of interoperable data repositories. In VA, we are developing the health data repository. In DOD, they have the clinical data repository and that seamless interoperability comes about through the release of something called CHDRs, the joint interoperability of those health data repositories.

We are working with our colleagues at the Centers for Medicare and Medicaid Services to make the benefits of the electronic health record available to other providers through the development of VistA-Lite, VA's community version of the VistA system. VistA-Lite will be streamlined and enhanced to make it affordable and accessible for outside use. This should be available in November.

Mr. Chairman, we all have a long way to go in optimizing our use of information technology in health care. Electronic health records, personal health records, data and communication standards, sophisticated analytical tools, have already been implemented in some settings and are maturing quickly. Our challenge is to create a technology infrastructure that will revolutionize health care without interfering with the interaction between care providers and patients that is at the core of the art of medicine.

The electronic health record is no longer a novelty. It is accepted as a standard tool in the provision of our health care services. Our focus is now on moving forward from technical implementation issues to those that improve data quality, content standardization, and greater interaction with other providers and systems. With the expanded use of the electronic health record, we can continue to make strides in improving patient safety and quality of care. Additional data and communication standards enable us to exchange clinical data with DOD, other Federal agencies and other heath

care partners regardless of which electronic health systems they use.

Our strategy is based on the simple truth that today's service members are tomorrow's veterans. It is our responsibility to make sure that their transition from Active-Duty status to veteran status is as seamless as possible. In fact, we have the obligation to assure that all the past experiences inform current and future care. And we look forward to partnering more effectively with all of our Federal colleagues, but particularly DOD, so that we can provide the epidemiology tools to make sure we understand the outcomes and how those might affect operational readiness and the ability to mitigate risk.

We look forward to sharing our systems and expertise with partners throughout the entire health care community and to supporting the President's plan for transforming health care.

Sir, this concludes my statement and we are pleased to answer any questions you might have. Thank you.

Mr. BUYER. Thank you, Dr. Perlin.

[The prepared statement of Dr. Perlin appears on p. 55.]

Mr. BUYER. Mr. Reardon, you are now recognized. Please introduce who you have with you.

**STATEMENT OF JAMES C. REARDON, MS., CHIEF INFORMATION OFFICER FOR MILITARY HEALTH SYSTEM, DEPARTMENT OF DEFENSE; ACCOMPANIED BY: LTC BART HARMON, DEPUTY DIRECTOR OF INFORMATION MANAGEMENT**

Mr. REARDON. I would like to introduce Lieutenant Colonel Bart Harmon, who is our deputy director of information management. He is a practicing physician, sir.

Mr. Chairman and distinguished members of the committee, I would like to thank you for the opportunity to appear before you today. With your permission, I would like to submit my written testimony for the record and provide the committee with a brief summary.

Mr. BUYER. Hearing no objection, shall be ordered.

Mr. REARDON. The Department of Defense has a long history of transforming health care delivery through the use of information technology. For more than a decade, DOD has been a national leader in using one of the world's first and largest computerized physician auto entry systems called the Composite Health Care System.

DOD recognizes the value of secure and on-demand computerized patient information as a substantive way to enhance patient safety and the quality of health care delivery. CHCS I reduces patient wait time, increases patient access to medical services, and it allows faster and more efficient reporting of diagnostic test results. This quantum leap from paper to electronic order entry has permitted DOD health care providers to electronically order laboratory tests, retrieve test results, authorize radiology procedures, prescribe medications, and schedule appointments.

Today, DOD providers e-prescribe greater than 60 million prescriptions and tens of millions of lab tests. Paper prescription pads and paper lab orders are, similar to the VA, are a thing of the past.

CHCS I also provides the backbone for the very successful Pharmacy Data Transaction Service. PDTS maintains a patient medica-

tion profile for all DOD beneficiaries worldwide. Through information technology, PDTS compares a beneficiary's new prescriptions against previous prescriptions which are filled through any of the points of service in the military health system, whether that be a military treatment facility, a retail network pharmacy, or the TRICARE mail-order pharmacy. A cutting-edge benefit for beneficiaries and providers alike, PDTS has improved the quality of prescription services and enhanced patient safety by reducing the likelihood of adverse drug interactions and duplicate treatments.

Each prescription undergoes clinical screening against the patient's complete medication history before it is dispensed to the beneficiary.

Use of 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 reasons.

DOD has made significant strides in advancing increased access to health information, patient appointments, and contact information for hospitals, clinics, and providers by implementing TRICARE Online. TOL is an enterprise wide Internet portal used by DOD beneficiaries, providers, and health care managers worldwide. TOL links beneficiaries to information on TRICARE services and benefits, as well as providing health resources such as disease management tools, drug interaction checkers, and a personal health journal.

The Department is currently in the process of fielding the next version of the Composite Health Care System, CHCS II, which is a Windows-based application that further enhances clinical capabilities and provides a user-friendly interface with improved coding and expanded documentation of medical care. It is an enterprise wide clinical information system that maintains and provides worldwide, secure, on-line access to comprehensive patient records. CHCS II is secure, standards-based, and patient centric, for use in our garrison medical facilities and our forward-deployed medical units. Streamlining and computerizing business processes, CHCS II stresses a team-based approach to health care that will improve efficiency in providing timely services to our patients as well as continuity of care, patient safety, and timeliness of diagnoses and treatments.

Over the past year the Department of Defense and Veterans Affairs have launched a new era of departmental collaboration with strides towards Federal partnership through a number of initiatives. DOD and VA are lead partners in the Consolidated Health Informatics Initiative, one of the 24 initiatives supporting the President's management agenda. The goal of Consolidated Health Informatics Initiative is to establish Federal health information interoperability standards as a basis for electronic health data transfer in the Federal health activities and projects.

DOD and VA are also leading partners in national standards development organizations, such as the National Council for Prescription Drug Programs, "X.12," "CX.12," and the Marco Foundation Initiative on Collaborating for Health through a series of development groups and standards groups.

DOD and VA are active partners in the Federal Health Architecture Initiative recently kicked off by HHS. Federal Health Architecture offers an excellent opportunity to build partnership through the Nation's health care environment and the development of an integrated health information exchange network. DOD and VA are co-leads on the Health Care Delivery—Electronic Health Record Work Group for the FHA, which was recently formed in May 2004.

Mr. Chairman and distinguished members of this committee, the Department is committed to collaborative efforts under way between DOD and VA and the HHS, and our shared commitment to strong DOD/VA/HHS collaboration places us in the forefront of interagency health information-sharing.

Thank you for the opportunity to testify before your committee, Mr. Chairman, on this important issue, and I am pleased to accept your questions.

Mr. BUYER. Thank you, Mr. Reardon.

[The prepared statement of Mr. Reardon appears on p. 67.]

Mr. BUYER. Ms. Koontz, GAO's responses to posthearing questions for our March 17, 2004, hearing stated that VA and DOD have spent $668.7 million individually or collectively on their efforts to develop interoperable medical records since 1998. So, what do they have to show for that much money?

Ms. KOONTZ. That is a collective figure. First of all, it includes their previous efforts on GCPR, which eventually resulted in the one-way data transfer from DOD to VA. It also—part of the money went to the development of VA's new system and to a prototype health data repository. It also went to—for DOD's side—the development of CHCS II and to complete their clinical data repository, and also they are in the process of deploying block one of CHCS II, which will give them the electronic health records that VA has had for some time.

Mr. BUYER. How have the Departments responded to the concerns in the last 2 months to issues that you raised in your March testimony?

Ms. KOONTZ. In the last 2 weeks, we have shared with VA and DOD both our responses to your questions for the record as well as the draft report that has specific recommendations about how we think they needed to move forward. I think at the outset of that, we had some point and counterpoint, not because I think that VA and DOD necessarily disagreed with what we were saying in concept, but to some extent I think they maintained that they had already addressed these issues. We did not agree on that point. However, I think in the last maybe week or so, we have had some additional communications, and I am having the sense that there is a greater responsiveness on the part of both agencies to address our recommendations.

Mr. BUYER. You know, Dr. Brailer has only been on the job for 48 hours in Health and Human Services. If he were here today, how would you advise him regarding the collaborative effort between VA and DOD? What would you say to him? Or, if necessary, we will arrange that meeting.

Ms. KOONTZ. I hope I do get to talk to Dr. Brailer sometime.

I would advise him first that the experience that we have seen thus far with VA and DOD certainly underscores the need for a

disciplined approach and for planning for his own effort that he is doing for the President.

I would also say that VA and DOD have been working to develop electronic medical records for some time, and that there are certainly lessons that he can learn from their experience. And in addition, he should take advantage of the expertise that already exists in these two agencies because of their experience.

I would also say that with the right processes and controls in place at VA and DOD, I think that the effort that they are planning will inform and advance what Dr. Baylor is trying to do. And in that sense, he should closely coordinate with these agencies to make sure that these efforts move forward in concert and that they complement one another over time.

Mr. BUYER. Are VA and DOD collaborating with regard to the vendors they are using so that they have languages and technology that can talk to each other?

Ms. KOONTZ. I think that had you asked me that question a number of months ago, I would have registered concern with the level of coordination and collaboration that we were seeing between the two Departments. In many cases, when we talked to each Department, they talked very differently about the projects. But I think that recently we are seeing some improvement in that degree of collaboration. I think we see more direct communication, and I think they are moving to a better level of that.

Mr. BUYER. Are you familiar with the different vendors that are out there right now?

Ms. KOONTZ. No, I am not.

Mr. BUYER. Well, let me ask that question to both of you, Mr. Reardon, and Dr. Perlin. Who are the vendors you are using, or, in fact, are you collaborating between the use of the vendors? And if so, are there any problems that you are finding, whether with the vendors or hardware or software?

Mr. REARDON. Sir, over the last few months we have actually issued a number of joint contracts where the VA and DOD have put an RFP on the street, done the evaluation together, and issued contracts. We have a couple of companies that we are doing business with, such as Northrop Grumman information technology, which is working for both of us in the development of capability and also in TMIP.

Mr. BUYER. Were these sole-source contracts, or were they bid?

Mr. REARDON. These were competitively acquired, sir. We put them out on the street and got bids in. think that the unique aspect of this is that the evaluation teams consisted of both VA and DOD members sitting at the table together making the selection for the contracting office.

Mr. BUYER. That is great.

Dr. PERLIN. To that I would add to your question or change it slightly. You asked how we are working on vendors to share the same standards. In point of fact, what is so exciting about the current environment is that there seems to be a consolidation around standards, and I am pleased to say that our two agencies are helping to drive that. The National Health Information Infrastructure really specifies the number of standards that, regardless, of which

vendors we actually end up using or choosing, we end up using the same standards so that we can interact together.

Mr. BUYER. How often do you or the two gentlemen that you have with you visit DOD facilities?

Dr. PERLIN. I am going to Walter Reed next Friday actually to——

Mr. BUYER. Well, that is prospective. What have you done in the past?

Dr. PERLIN. I have been to Walter Reed with Colonel Phillips and seen that system. I have seen CHCS II, and I am pleased to say that Jim Reardon, Nelson Ford and General Peake have joined us last week over at VA. Rob and Jim meet biweekly, so we do try to keep an eye——

Mr. BUYER. Outside of Walter Reed, where have you been?

Dr. PERLIN. Personally, not to as many facilities as I should.

Rob, do you want to talk about your trips?

Dr. KOLODNER. I have visited out at Tripler, also been at Madigan, been at Beaumont Army, and also at Las Vegas at the Air Force facilities.

Mr. BUYER. Nellis?

Dr. KOLODNER. Nellis.

Mr. BUYER. Okay.

Sir, and what VA facilities have you visited?

Mr. REARDON. The only facility I have been to, sir, is the Washington-based facility. I haven't been to any of the other ones.

Mr. BUYER. How long have you had? You have been in this profession for 28 years, right?

Mr. REARDON. Yes, sir. Oh, in the past I have visited the VA facility in Philly.

Mr. BUYER. Okay.

Mr. REARDON. But I am talking recently, sir.

Mr. BUYER. Recently? And recent would be defined in the last 5 years?

Mr. REARDON. Three years, sir.

Mr. BUYER. Within the last 3 years.

Mr. REARDON. Yes, sir. I would like to, if I——

Mr. BUYER. All right. Well, I am not going to beat you up; I am just glad you are doing it. It is pretty important that we get out there and you are able to see this, and you find out whether or not it works with regard to what you want to do. And nothing like getting out and being there and seeing it, feeling it, and sensing it.

Mr. REARDON. Yes, sir.

Mr. BUYER. All right.

Mr. REARDON. Could I——

Mr. BUYER. Yes.

Mr. REARDON. There was one other item—you asked about the contractors, sir. There is one other aspect of that that I think is important. DOD—as an example, just conducted a competitive acquisition for an enterprise wide scheduling capability that we needed to replace an existing capability. The VA did not need that capability; they have the capability to a lesser extent. What we have required in the RFP for the winning vendor is to ensure that the winning vendor is interoperable with existing VA outpatient sched-

uling. We are also building that into all of our contracts to make sure that interoperability is a requirement, and standards-based.

Mr. BUYER. Dr. Kolodner, if you were out at Tripler—I use it always as an example. I shouldn't, but I do because it just drives me crazy that you could fly a paper airplane from Tripler to the VA, yet they have got systems that can't even talk to each other. And I know they are working on it. I think the more I talk about it, the more we are going to continue to work on it, because if there is anyplace that we can get it done, it is at Tripler. I mean, I really believe that.

Dr. KOLODNER. One of the new activities that Mr. Reardon and Dr. Perlin referred to is one that is building on the FHIE. We invested in FHIE. We have the records for the separated service members that are now available within 30 seconds or so to our clinicians when they click on that remote data view. And what we also saw, that for a relatively small increment of investment, that we can add additional functionality and actually have a point-to-point type of sharing.

So it is not at the corporate level, all of the data from DOD, all of the data from VA. We will be getting that with our product in the fall of 2005. But, for example, at a joint venture like that at Tripler, that we—the VA clinician can click and get the information from DOD and from that site; and vice versa, that at DOD they can click the information and get it from the VA system.

We have let a contract for that. We will start that in operation in October of this year in a phased rollout and over the next 6 months after that. And they will be able to get— all of the information that we currently transfer after separation in FHIE we will be able to get in real time. And that is the data standards or DSI project that we mentioned.

Mr. BUYER. Who is the contractor?

Dr. KOLODNER. The contractor for that is Northrop Grumman. It is building on what we had contracted with them for the FHIE.

Mr. BUYER. All right. Thank you.

Ms. Hooley, you are now recognized.

Ms. HOOLEY. Thank you, Mr. Chairman.

Dr. Perlin, I was very impressed with what you were showing us. I would like to see lots of other people use that. Are there any plans to patent ViSTA Lite so VA can recover some of the costs when it is distributed to the private sector? Is there any plans for that?

Dr. PERLIN. Thank you, Ms. Hooley. I don't personally think I can go back to practicing on paper again after using the system. Taxpayer dollars developed this, and so we are not at liberty to patent this, but we are excited about sharing it. We are excited about that because others will develop utilities that will have value back to VA and to DOD, and we recapture some of our investment that way as people write to these sorts of applications.

Ms. HOOLEY. Okay. So we can't use—we use Federal dollars, we can't patent something?

Dr. PERLIN. Rob, you want to elaborate on elements that might be patentable?

Dr. KOLODNER. We looked at this going back 15 years ago. The software is not patentable, at least the type of software we have.

It can be copyrighted, but that is what we are not allowed to do with things that are—written by Federal employees, or in the case of the way the VA does purchasing on our behalf. But we do make it available. It is a software, for example, that Indian Health Service is using. They are using a slightly older version now, and we are working closely with them to help them come on to the current Vista in the future. And with ViSTA Lite, CMS will make it available through their quality improvement officers out to rural and underserved areas.

Ms. HOOLEY. How soon do you think—any one of you. How soon do you think this will be out and really established so that it is used throughout medical centers and doctors' offices throughout the United States?

Dr. KOLODNER. The release of the ViSTA Lite, the modifications that meet a broader need, are aimed for November of this year. There will be some time before others will then take it and put it in. We find that it is 12 to 18 months for a site to prepare and begin using it. But the idea is not for everyone to use that particular software, it is simply something that would help some of the rural and underserved areas, and would be a stimulus for other health care providers to use what is very good commercial software that is out there as well.

Ms. HOOLEY. Do you have some concerns about—again, I am going to go back to privacy. Do you have some concerns about that? I mean, people more and more are concerned about financial privacy, medical privacy, you know.

Dr. PERLIN. That is a fair question to ask. But, in fact, what concerns me more is the lack of privacy with paper. People assume that because this is electronic that it must be less private. And, in fact, a famous study from Harvard about a decade ago, admittedly dated by the fact that hospitalizations were 6 days on average, showed that the chart was perused by 300 pairs of eyes without any record of who looked at it.

These sorts of systems provide and are built increasingly to provide audit trails of whoever accesses it. And I am pleased to say that the security is the same sort that you and I entrust our finances to under ATMs and on-line banking. The way it has been developed is that the security applies to the chart. So if one were to use a supercomputer to break the code, they would have one record, they would have to start all over again for the next record.

So while I appreciate the concerns, I feel personally more confident about my records being held in this environment than being faxed hither and yon.

Ms. HOOLEY. Are you seeing more and more records as you do it in the VA or DOD? Do you outsource your medical recordkeeping?

Dr. PERLIN. We don't outsource, we eliminate. In fact, Dr. Lynch may want to tell us about saving $600,000 in one hospital alone by getting rid of his medical records. And so this is actually the replacement for medical records.

If you want to elaborate.

Dr. LYNCH. This is a little bit dated because it is about 5 years ago and one of our first facilities to go paperless, meaning nobody delivers a paper chart through a clinical encounter. It is all there

electronically, which means that the people that would deliver that chart and file all of the paper that flows out of the visit back in that chart basically no longer had to do that. It just relates to the salary dollars for those individuals. And I think you all know that VA is much busier now than it was 5 years ago.

But at one medical center, which represented about 1 Percent of the clinical and economic mass of VHA, the salary savings were about $600,000 just to stop moving paper around the building. If you scale that up, it would easily be a million dollars at that medical center today, probably more, based on the workload increase. That being about 1 percent, you would be looking at about $100 million in salary dollars for the whole system, which is pretty much where we are now.

We are pretty much moving to paperless across the system, and that does not get into all the things Dr. Javitt talked about in terms of medical errors, duplicate laboratory testing. That is literally just the logistics of the paper.

Ms. HOOLEY. Thank you.

Mr. BUYER. Dr. Perlin, your electronic medical records, CPRS, works nationwide, doesn't it?

Dr. PERLIN. Yes, sir.

Mr. BUYER. So if I go to the Walla Walla VA, they can share that medical record in Indianapolis?

Dr. PERLIN. Yes. Right now I would have to use remote data view to access the information that is there, and I would receive it in text form. As we rehost our system over the next 18 months or so, all of it will be totally seamless as if you were at one VA, and that really becomes more exciting, because that means all of that information is available chronologically, not just a sort of text dump of what occurred. So—do you want me to elaborate on that?

Mr. BUYER. How is the VA's CPRS different from DOD's CHCS I and II medical record systems?

Dr. PERLIN. I am going to turn to the experts on articulating differences.

Dr. KOLODNER. CPRS is an interface that works across all of the settings, inpatient, outpatient, and long-term care. And it is—it brings together a variety of the applications so that the doctor can look at progress notes and enter them, look at orders and enter them, and a variety of radiology reports as well. It is the Windows front end to that. So, for example, the underlying system is very similar in its architecture to the CHCS system, but we were able to put a clinical interface that brought together information from the various modules even on the old system, but because of that interface, we have our doctors entering their notes and retrieving their notes across all settings. We have all of our discharge summaries that have been entered in by being transcribed and signed or by being entered directly have been in for the last 10 years.

CHCS II, I would like to let Mr. Reardon comment on how it compares to that.

Mr. REARDON. CHCS II is a similar product. The requirements for CHCS II are built out of our theater requirements, and CHCS II is built in such a way that it will operate on a laptop computer so that our deployed medical units can take the capability out, with the same look and feel as the capability that they are using at one

of our CONUS-based facilities so there is not a training issue. It uses a structured documentation approach as opposed to free text. The data that is entered into CHCS II is very minable for us to be used to conduct population health, to track outbreaks of disease, real-time outbreaks of disease, among our troops. It is also based that way so that it is able to do the epidemiological analysis that would need to be done should we have another problem such as Gulf War Syndrome so we can go back and pull that information out of the electronic——

Mr. BUYER. There is no such thing.

Mr. REARDON Right.

Mr. BUYER. You guys drive me nuts. It is Gulf War illnesses. Okay?

Mr. REARDON. Yes, sir.

Dr. KOLODNER. The strategy in VA is to take CPRS as it now is structured. We have basically refined the interface with clinician input in terms of what works across all of the settings. And we are going to rewrite that in the—with the new languages and the new technology so that, from the clinician's point of view, there is very minor changes as we fundamentally change and restructure our systems from being facility-based, which is what they are now, which is why we have to use the remote data views to pull data from other sites, changing our system to the Healthy Vet ViSTA, which is person-based with the repository.

The interface will look very similar to the clinician, so there is not a new learning curve, but it will be much, much more powerful because all of the data will be standardized and will be brought to them as they see the patient.

Mr. BUYER. Is the CPRS system an in- and outpatient system?

Dr. PERLIN. Yes, sir. It extends across all care environments. It is seamless to the user, whether you are in the inpatient, ER, or the intensive care unit, the operating room, the long-term care hospital. At any possible site work where we have clinicians, they can interact with the system. They are modules that are tailored to that. But the data transfer occurs across all environments of care, inpatient, outpatient, long-term. And it looks the same and operates in all those environments, from Washington city to Washington State. In fact, Dr. Javitt took a PITAC, President's Information Technology Advisory Committee, team to Washington State. They pressed that question exactly. And I am pleased, they were pleased, to see 100 percent concordance.

Mr. BUYER. So when we have a soldier, or a marine that is over at Walter Reed, he is now facing a medical discharge, he returns to his home VA, can DOD send to the home VA his electronic medical record and x rays necessary to do follow-up health care? Can that happen today?

Dr. KOLODNER. Through FHIE, whatever information is in CHCS will move across and be available. And that will be corporately, wherever the service member had been seen in DOD. As we testified last time, there is a delay of about 60 to 75 days that has to do with the DOD service notification up and knowing that that person is discharged and moving across.

The project that I mentioned just a few minutes ago will allow the person at their home VA—excuse me, the clinician at the home

VA to say, I want data from Walter Reed, and reach over even if they were discharged 2 days before, and will provide that information in real time without that 60- to 70-day delay, but it will be just from that one site.

Mr. BUYER. I choose not to quibble. I just want to make sure that we are all on the same path. We want just-in-time delivery of health service, right? Just in time.

Dr. PERLIN. I would emphatically endorse that. The ideal is that we have access now—I am very appreciative of the ability to stand up bringing data over. The ideal is when we can look and operate like one seamless operation system with respect to the electronic health record. And that is why I am so excited about the health data repository and clinical data repository convergence called CHDR.

Mr. BUYER. We are prepared to finance such a thing. I am not prepared for the delays and the bureaucracies. I mean, this goes across party lines here. We know what it can do and how it can set the standard. Plus the purpose of this hearing today is to talk about how much money it saves. That is the dynamic scoring. Things that we do here in Congress to bring efficiencies, we don't get credit for those things, but we know, in fact, what we are trying to achieve. And also, the patient safety and better delivery of health care.

Let me ask this question, Mr. Reardon. How long has DOD been trying to deploy CHCS I?

Mr. REARDON. Well, sir, the first version of CHCS has been out for about 10 years now, operating in all of our facilities, DOD hospitals and clinics throughout the world. This is the one that gives us the computerized physician order entry, admission, disposition transfer, appointing, and all of those capabilities. CHCS II——

Mr. BUYER. Let me get through your testimony. So in 1994, I was on this committee in 1994. You were talking about the system in the late 1980s.

Mr. REARDON. Well, sir, I think the system began fielding in the late 1980s, and we completed in the 1993/1994 time frame, sir.

Mr. BUYER. Okay. Thank you.

Mr. REARDON. CHCS II has been in testing for a year and a half and we started to field that across the environment beginning in January, January of 2004, sir.

Mr. BUYER. Do you know what the total investment has been to date since inception?

Mr. REARDON. I don't.

Mr. BUYER. Give me a guesstimate. All right. You can do it for the record. How is that?

Mr. REARDON. I will do it for the record.

[The information follows:]

Insert Page 70/Lines 1580–81

**Do you know what total investment has been to date since inception?**

The estimated DOD investment of CHCS development and deployment is $14 billion from FY79 through FY05.

Mr. BUYER. And when you do that, do it also for CHCS II deployment and total investments to date.

Mr. REARDON. I will, sir. Yes, sir.

[The information follows:]

Insert Page 70/Lines 1586–87

**And when you do that, do it also for CHCS II deployment and total investments to date.**

DOD has invested $464 million to date on the development and deployment of CHCS II from FY97 through FY03. This effort is ongoing.

Mr. BUYER. In your testimony, you state that DOD has deployed to over 500 DOD medical facilities. Can a DOD hospital on the east coast transmit medical information to a DOD medical facility on the west coast in real-time?

Mr. REARDON. No, sir.

Mr. BUYER. And what is your expectation, what is your hope that that, in fact, can be done?

Mr. REARDON. Sir, today the DOD has structured their systems where we have regionally-based capability. So in the National Capital region, we have one host, one computer that supports Walter Reed, Bethesda, Fort Meade, Malcolm Grow, Fort Belvoir, DeWitt, and all of the outlying clinics. We have another one located in San Antonio and in the Northwest. We have moved to the Clinical Data Repository for that very reason; so we have all of the information available in one location on a patient that will be accessible from any facility. The fielding schedule to bring that completely up with all of the information is 30 months.

Mr. BUYER. So you would disagree with the witness from the first panel who thought this could all be done in 1 year?

Mr. REARDON. I think, sir, that Dr. Javitt, when he talks about bringing our systems together electronically and exchanging information, was referring to a year; and if I am not mistaken, and I understood it correctly, that we are talking about doing that in roughly 15 or 16 months. That will be a year from October, sir, or a year from September.

Mr. BUYER. What are your obstacles?

Mr. REARDON. The obstacles now for us are primarily in standing up the CDR, training, implementation, and getting all of the users up. It is quite a large number of people that we have coming up on the system and there a lot of business process reengineering that goes along with that. We are working very closely with the three medical departments who have responsibility for the fielding into their facilities on trying to make that a smooth and streamlined process.

Mr. BUYER. So we have no obstacles with regard to the private sector and what they can offer on to us to achieve our goals, or are there?

Mr. REARDON. We are, with our clinical data repository, we are working with Oracle, Hewlett Packard and 3M, who has our health

data dictionary, sir, as well as Integic and SAIC. There is a group of prime contractors that we are working with, and it is based primarily on commercial off-the-shelf technology. So I think we are working very closely with industry as we move forward in this endeavor.

Mr. BUYER. I am trying—I want to ask this. I don't know how—it may come off right, it may come out awkward. With regard to CHCS II and—is anyone in the private sector, whether you are aware, any interest in our system? Has somebody ever called you and said, I like what you are doing; we ought to do that in the private sector? Or is the private sector helping us build something that is unique?

Mr. REARDON. Well, the private sector is very interested to include health care organizations. We do, have done, a number of demonstrations of the capabilities. I think on the health side that there is interest in moving to a centralized data repository. Yes, sir. We use industry from a technical perspective to help build, operate, and maintain the product.

Mr. BUYER. Would that be the same for the VA and your CPRS system?

Dr. PERLIN. There is a lot of interest in both public and private sector. We have two companies that are actually remarketing the public domain portions of our software, and we are pleased to be collaborating with the DC Government, sharing our system with the DC Department of Public Health to help them organize and improve their care; foreign governments, including American Samoa where we have the LBJ Tropical Medicine Hospital; State governments, Washington State, West Virginia; a number of medical schools that have expressed interests. Other countries: Internationally, U.K. has taken an interest with their reengineering project; Egypt; World Health Organization; Sri Lanka; Germany; Finland; Jordan. Mexico is extremely interested on a national level; Australia, among others.

Mr. BUYER. Very good.

Mr. Reardon, in DOD's press release dated May 11, 2004, Dr. Winkenwerder states that, quote, "for more than 10 years we have had a computerized physician order entry capability that enables our providers to order lab tests and radiology exams and issue prescriptions electronically," end quote.

After all this time, aren't you talking about transmitting outpatient information only?

Mr. REARDON. That is primarily outpatient information, yes, sir.

Mr. BUYER. Mr. Reardon, in the same press release you state that, quote, in January 2004, we began our worldwide rollout of the next-generation system CHCS II. It is a secure, scalable, patient/centric and world-class electronic record, Is what you stated. Then how is it that—this is dated—this is your release dated May 11.

Mr. REARDON. Yes, sir.

Mr. BUYER. So you send this out on May 11, and then on May 6th, though, 5 days before this press release that CHCS II was experiencing increasing instability as you added new sites. And on the same day as the press release, you had to put a 60-day hold on CHCS II because the system became unreliable. I also under-

stand the services are balking because it affects their operational mission.

Is this a scalability problem, or would you please comment with regard to the press release versus what happened in the interim of your system?

Mr. REARDON. Yes, sir. It may be a scalability issue. The engineers are not sure of that right now. What we do know is that after—we had an engineering team on site at the Defense Enterprise Computer Center in Montgomery, which consisted of Oracle, Hewlett Packard, Integic and some others, an intensive root cause analysis was conducted and one of the areas that they pinpointed as an issue, was the Oracle database. Over last weekend, they upgraded to a new version of Oracle, and for the last 3 days now the system has been stable. We haven't had any pauses.

We don't believe that that necessarily will correct all of the problem. We have got a team on site, and we are continuing to aggressively manage the situation.

As we roll the capability out, and as we bring more users on, I think that it is possible or even probable that we will run into technical issues as the system grows. The approach that we have tried to take, Mr. Chairman, is to make sure that we are on top of the problems all the time working hard to rectify those problems when they occur quickly.

So it is a very aggressive management. We work very closely with the Service medical departments. We meet with them every day on these to review the status and the progress, and identify actions and issues.

Mr. BUYER. All right. Let me go to this issue out at Walter Reed with perhaps a lack of patients and the Health*e*Force initiatives. What is your take on this?

Mr. REARDON. I think that the Health*e*Forces product is a very good capability. It is built on our composite health care system. It draws a lot of information out of that. I have been over and have actually had a couple meetings and demos of the capability. I have directed and what I have asked people to do, working with the Army medical department is to take a hard look at that capability and see how we can take those capabilities and integrate them into our existing products. That work is under way right now, sir, to see how we can use that very good capability that was developed locally at the desk site, as Dr. Perlin talked about, where most of our innovation comes from, and bring that in so that those capabilities can be used across the enterprise.

Mr. BUYER. Okay.

Mr. REARDON. It is a good capability.

Mr. BUYER. Colonel, do you have anything you want to share with us today?

Colonel HARMON. Certainly, sir. Along the lines of the Health*e*Forces functions at Walter Reed, that isn't a new theme for us to have local innovation and local sponsorship. We have actually picked up capabilities that came out of one of the Services versus all three, got those approved as a need across the three Services within CHCS II over the history of the project. In fact, when we initially were conceptualizing the user interface, we looked at the VA system, and the first screen you see, that health history, we un-

ashamedly stole that concept from the VA—reused it is probably a better term for it.

The immunization functions within CHCS II were built by the Air Force, brought forward, and the requirements and capabilities extended so that they meet the needs of all three Services, and we rolled them into a corporate product. We have force functions that were built at San Antonio, TX, by the Army that had been recently integrated as a proof of concept to show an Army physical exam profiling function that is specific to the Army based on the patient's Service will display the function or not display it.

We are actively looking for those kinds of reuse. What we have to do, though, is we make sure that as we roll them into the corporate solutions, that they look and walk and talk the same way as we scale them down to a laptop in Iraq and Kuwait, because when we deploy our physicians with a week's or 2 weeks' notice, we can't have them learning all new software in the deployed environment. So sometimes we have some technical issues importing those locally developed capabilities to a corporate solution that scales down to a laptop in a HMMWV, for example. Those changes have to be addressed.

Also, in terms of monitoring for use of biologic and chemical weapons in a deployed environment, we have pushed very hard in the outpatient setting for structured documentation to include the physical exam findings and the history of present illness findings largely for that type of surveillance purpose. We have pushed that harder than you will see in many other environments because that is a requirement for us and part of our mission. It is not a detraction from any other organizations that they wouldn't push that hard; it is a requirement and a mission need for us to push that kind of structure in the outpatient setting. A lot of what happens in our area, support, medical companies, is fast-paced outpatient care, so we push that pretty hard.

Mr. BUYER. Earlier, from some earlier hearings we had pretty good discussions about the postdeployment questionnaire survey, whatever you want to call it, exam. Have you been exploring how we can get the postdeployment questionnaire to the VA?

Mr. REARDON. Yes, sir. We worked with the VA and put a capability together, which was to use our Web portal, but it really wasn't satisfactory to the VA from the business process perspective. What we are looking at now and getting technical proposals on will be actually moving a copy of all the pre- and posthealth assessments that we have resident in our defense medical surveillance system to the VA.

One of the questions that came up earlier today with Dr. Javitt had to do with HIPAA, and technically moving the pre- and post- to the VA so that they are available in the database for the doctors to look at is a fairly straightforward issue as far as technically. What we are working through on HIPAA is whether you can move the pre- and post- on individuals who have not separated, or can we just do it on separated members?

If we can do it on members that have not separated, it makes it a much more straightforward process for us. If the technical solution can only address those that have separated, then it will take

a bit more work. But it is still very doable, but it will take a bit more work.

That issue was actually discussed the day before yesterday with me, and of course we have to go to our OGC and lay this out and say that we think there is a way we can move it to the VA. But the VA can't look at it until somebody has actually enrolled for care. We are working through those details, sir.

Mr. BUYER. Good.

Ms. Melvin, do you have any comments you would like to say based on everything you have heard? You work intimately on this.

Ms. MELVIN. No. I will let the record stand.

Mr. BUYER. All right. Well, I assure you the subcommittee will continue to keep its focus on the issue, and we appreciate how much work you have done this year, and let us continue moving forward. I appreciate your contributions. And thank you, Ms. Koontz. This hearing is now concluded.

[Whereupon, at 11:50 a.m., the subcommittee was adjourned.]

# APPENDIX

## PREPARED STATEMENT OF CHAIRMAN BUYER

Good morning. Today's hearing is entitled, VA's Role in the Development of Interoperable Electronic-Medical Records Systems in the Federal Government. During a recent visit at the Baltimore Veterans Medical Center, President Bush said: "The 21st-century health care system is using a 19th-century paperwork system." He went on to say: "These old methods of keeping records are real threats to patients and their safety and are incredibly costly." The President has proposed $100 million for 2005 for demonstration projects of IT health care.

While this Subcommittee has held a number of hearings on the importance of moving toward electronic medical records, today's hearing will bring a new element into the discussion. I am referring to the potential savings in health care costs that could be realized by moving from paper records to electronic medical records.

According to Dr. Blackford Middleton, Chairman of the Center for Information Technology Leadership, and I quote, "Standardized information exchange would save the nation $86.8 billion each year. Clearly, we must accelerate efforts to focus national policy discussions on implementing standardized healthcare information exchange and interoperability." Dr. Blackford made this statement before the Healthcare Information Management Systems Society (HIMSS) on February 23, 2004. In fact, we asked Dr. Middleton to be a witness at this morning's hearing. Unfortunately, he was unable to do so but indicated that he would be happy to testify another time.

Dr. Middleton's statement is a fitting introduction to today's hearing and the important steps that have already been taken to standardize health information. The VA has played a pivotal role in laying the groundwork for setting health information standards to be used across the government. Over the last two years the VA has worked with the Departments of Defense and Health and Human Services to build upon the five standards which were announced by HHS on March 21, 2003. More recently, on May 6, 2004, the Departments of Defense, Veterans Affairs and HHS announced the adoption of 15 additional standards agreed upon by the Consolidated Health Informatics Initiative, which is an integral part of the e–Gov Initiatives of the Administration.

Dr. Jonathan Javitt, a member of the Subcommittee on Health Care Delivery and IT of the President's Information Technology Advisory Committee is our lead witness today. I am sure we all look forward to hearing his perspective in his role as a member of the President's health IT team.

Today's hearing will also focus on the progress which has been made by the VA and DOD in their joint effort to develop and deploy electronic medical records that are interoperable, bi-directional and standards-based. According to the GAO's current assessment of the top five priorities that still need to be addressed in 2004, I was surprised to learn that the basic fundamental process of program design such as the development of an architecture for the electronic interface that articulates system requirements, design specifications, and software descriptions have not been agreed upon. I must ask a basic question, Shouldn't these basic functions have been identified before the project got under way? GAO also cited the need for project milestones and precise performance measures to provide for the basis of comprehensive program management, progressive decision making, and authorization of funding for each step in the development process. Again, this is rather basic. Having a business plan with measurable outcomes should be in place on the front end not on the back end of a project. VA and DOD have been working on this initiative since 1998—without these key elements in place. This does not represent good program management.

So, after 6 years and $668.7 million we have a system that is capable of a one-way transfer of information. I'm not sure I would categorize this as a great success.

I hope you prove me wrong today by telling me that you have made substantial progress beyond the Federal Health Information Exchange and that the implementation date for CHCS II is on target. I will close by saying that I believe with thousands of service members returning from Iraq and Afghanistan they should not have to endure other battles in order to receive timely transition to VA health care and benefits.

Testimony of Jonathan C. Javitt, M.D., M.P.H.
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Mr. Chairman, Members of the Committee, distinguished staff, and guests, thank you for inviting me to testify before you today. My name is Jonathan Javitt. I am a physician who has been active in pioneering applications of medical records since 1982. It has been my honor to Chair the Health Subcommittee of PITAC, the President's Information Technology Advisory Committee, a bipartisan panel of experts that serves the Executive Office of the President, which was established by the High-Performance Computing Act of 1991 as amended by the Next Generation Internet Research Act of 1998 and subsequent Executive Orders.

As you know, PITAC operates under the Federal Advisory Committee Act and is in the process of finalizing its Report to the President on Transforming Healthcare through Information Technology. Although the draft recommendations of this report have been presented in our public meeting and posted to our website they will not be formally adopted until our next public meeting. Therefore, any testimony I give before you today, while consistent with those recommendations, is based on my own experience and observation and is not the formal recommendation of PITAC.

You have asked me to provide you with testimony on potential savings associated with electronic medical records, both in human and economic terms. In short, the answer is that we know that the savings are there, but those savings have not been consistently measured in a manner that can be used to score federal initiatives to computerize our health care system within the budgetary rules agreed to by the executive and legislative branches of our government. I have spent sufficient time talking to leaders within the Congressional Budget Office, the Office of Management and Budget, and the President's Council of Economic Advisors to be certain in my testimony. Moreover, it is my belief that agencies and programs under the direct purview of this committee have the potential

to provide us with critically needed information on this subject that will inform future public policy in arenas that go far beyond the immediate focus of this committee.

In using the appellation "Electronic Medical Records (EMR)," it is critical to distinguish between EMR in isolation or EMR as shorthand for an e-health environment that includes not only the record keeping system, but also computerized order entry and decision-support tools to prevent medical error within an environment that shares patient data among the caregivers who must coordinate the care of a given patient including those in doctors' offices and clinics, hospitals, laboratories, and pharmacies. An electronic medical record without those features may offer convenience and workflow advantages in the local practice setting, but does not inherently improve care or offer the potential to reduce the costs of care any more than a well-maintained paper chart.

My experience in this area is both academic and practical, having been a founder and developer of commercial enterprises that offer electronic medical record systems and computer-aided decision support systems that are now used in the care millions of Americans. I have also had the opportunity to visit and evaluate in considerable detail the electronic health environments of the Veterans Health Administration and the Department of Defense.

There is no question today that a properly constructed e-health environment is directly associated with preventing medical error and reducing avoidable death and suffering. We all quote the Institute of Medicine (IOM) findings that suggest over 98,000 annual deaths from medical error. It is critical to remember that the errors studied were primarily errors of commission, rather than omission and were committed in the inpatient setting. Thus, the IOM may only be talking about the tip of the iceberg. We know that one in five laboratory tests is performed in the U.S. because the results of previous tests are not available at the point of care. We believe that one in seven hospitalizations occurs because critical information about patients has not been transmitted from caregiver to caregiver. Moreover, we know that one in eight physician's orders is not carried out as written when we rely on traditional paper-based systems. It is time that we stopped

delivering 21st century care using administrative methods that were well established when Hippocrates entered practice more than 2,000 years ago.

The outstanding work of Drs. Clem McDonald in Indianapolis, Blackford Middleton and David Bates in Boston, and Brent James in Utah, to name just a few has amply demonstrated that errors are prevented, hospital costs are avoided, and lives are saved when modern computer technology is added to the practice of medicine. There are simply too many bits of information for the human computer to track perfectly, particularly when patients are cared for by multiple doctors. Case studies, including those of the Health Information Management Systems Society, document internal savings within health care enterprises when electronic health records and attendant technologies are introduced. However, there is broad consensus within the healthcare world that much of the savings associated with such investment devolves to the benefit of those who pay for healthcare and to society as a whole.

Estimates of national savings achievable through the universal application of electronic health records and related technology range from $80 billion to $350 billion annually. Figures of this magnitude make inherent sense to executives of other major industry sectors who have seen more than a 30% reduction in administrative costs by getting the paper out of their systems. A similar reduction in the cost of medical care would free up sufficient resources to insure every uninsured American, lower the cost of care to working families, and pay for our new Medicare prescription drug bill without raising taxes or premiums. We must recognize that as medical technology advances, so too, will the clinical cost of care. The only place to save substantial cost is through the use of computer technology to simplify the administration of care and to reduce the occurrence of error.

The problem is that while we have outstanding cost-effectiveness data from the hospital perspective, we have almost no data that measure savings from the economic perspective of the payer. The Veterans Administration has some macroeconomic observations that suggest they are providing care to twice as many people with only 30% more money than

they were a decade ago. They attribute that in part to their outstanding computerization initiative.

I have recently completed a clinical study on the value of computer aided decision support from the payer's perspective, together with colleagues at Active Health Management, an enterprise that gathers simple electronic health information on behalf of nearly five million Americans and alerts physicians to potential opportunities to improve care. That study, which covered 40,000 insured residents of a Midwestern city, demonstrated an 11% reduction in hospitalization and more than a 5% reduction in overall cost of care. The study is expected to be published shortly in a leading, peer-reviewed journal. Unfortunately, I know of no other data, generated at the level of scientific reliability that we require for other healthcare investments, in which the introduction of e-health technologies is associated with clear savings to the payer.

I believe that compelling proof of savings from the payer's perspective is an essential to generating the level of federal investment that will be required to computerize our nation's health care system. For such investment to be made, savings must be scorable within the budget rules established by the executive and legislative branches of government. Otherwise, such investment will require the raising of additional taxes or expansion of the federal deficit. This is particularly true since, Government, in one way or another, pays for 57% of health care in the United States, when one tabulates the costs of Medicare, Medicaid, the Federal Employee's program, military and veteran's programs and the corporate tax deductions associated with employer-sponsored health insurance. The good news is that if we make the investment, the resulting savings are likely to enable us to do with our healthcare system what we know we must do to ensure quality care for all Americans.

The VA has not focused on measuring the cost-effectiveness of its extraordinary investment in EHRs, but with your committee's encouragement, it could team with expert health economists and demonstrate to the entire country how critical that investment has been. This is not a criticism of the VA. Their mission is providing for America's

Veterans, not doing health economic research. In this case, however, their experience is vital to informing much broader public policy. I urge you to encourage them to embark on this research and to assist them in gathering any required research expertise from other departments in government.

The U.S. Army has demonstrated some extraordinary health benefits through its Health-e-Forces program at Walter Reed Army Medical Center and other collaborating hospitals. Health economic analysis of that work, perhaps in collaboration with expert organizations such as the Agency for Healthcare Research and Quality in HHS, would likely provide proof of savings that are critically needed as we address the question of how to computerize this nation's health care system.

The potential savings to military and veterans' healthcare alone, an area of deep interest to your committee, gives you a compelling interest in the computerization not only of care provided by those departments of government, but of care contracted for in the civilian sector by those departments of government. I am confident that if we are able to measure the savings and thus make the investment required to computerize the civilian sector of our healthcare system, we will secure the viability of that system for future generations.

There is an additional economic measure that is needed and almost never discussed, that of the consumer preference or utility. I have yet to meet a person who chose one hospital over another because of an electronic health environment. The typical American does not recognize the dangers associated with paper-based methods. We hear the occasional horror story of the wrong organ being transplanted or the infant who was killed by receiving an adult dose of narcotics. We fail to recognize that every time we enter a paper-based healthcare environment, we are needlessly endangering our lives. The VA has proven to us that by instituting a bar-coding system adapted from the rental car industry, medication administration errors have been reduced from 12% of doctors' orders to less than one in a thousand.

Most investments we make in healthcare do not and are not intended to save money. They are made to add quality and longevity to life. As Americans come to recognize the

value that computerizing the health care system can bring to the care of themselves, their parents, and their children, we will be able to focus not only on the attendant monetary savings, but on the true economic savings, in terms of life, quality of life, and human productivity.

Thank you for inviting me today.

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Oversight and Investigations, Committee on Veterans' Affairs, House of Representatives

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# COMPUTER-BASED PATIENT RECORDS

## Improved Planning and Project Management Are Critical to Achieving Two-Way VA–DOD Health Data Exchange

Statement of Linda D. Koontz
Director, Information Management Issues

GAO-04-811T

May 19, 2004

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# Highlights

Highlights of GAO-04-811T, testimony before the Subcommittee on Oversight and Investigations, House Committee on Veterans' Affairs

## COMPUTER-BASED PATIENT RECORDS

# Improved Planning and Project Management Are Critical to Achieving Two-Way VA-DOD Health Data Exchange

### Why GAO Did This Study

Providing readily accessible health information on veterans and active duty military personnel is highly essential to ensuring that these individuals are given quality health care and assistance in adjudicating disability claims. Moreover, ready access to health information is consistent with the President's recently announced intention to provide electronic health records for most Americans within 10 years. In an attempt to improve the sharing of health information, the Departments of Veterans Affairs (VA) and Defense (DOD) have been working, since 1998, toward the ability to exchange electronic health records for use by veterans, military personnel, and their health care providers.

In testimony before the Subcommittee last November and again this past March, GAO discussed the progress being made by the departments in this endeavor. While a measure of success has been achieved—the one-way transfer of health data from DOD to VA health care facilities—identifying the technical solution for a two-way exchange, as part of a longer term HealthePeople (Federal) initiative, has proven elusive.

At the Subcommittee's request, GAO reported on its continuing review of the departments' progress toward this goal of an electronic two-way exchange of patient health records.

www.gao.gov/cgi-bin/getrpt?GAO-04-811T.

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.

### What GAO Found

VA and DOD are continuing with activities to support the sharing of health data; nonetheless, achieving the two-way electronic exchange of patient health information, as envisioned in the HealthePeople (Federal) strategy, remains far from being realized. Each department is proceeding with the development of its own health information system—VA's HealtheVet VistA and DOD's Composite Health Care System (CHCS) II; these are critical components for the eventual electronic data exchange capability. The departments are also proceeding with the essential task of defining data and message standards that are important for exchanging health information between their disparate systems. In addition, a pharmacy data prototype initiative begun this past March, which the departments stated is an initial step to defining the technology for the two-way data exchange, is ongoing. However, VA and DOD have not yet defined an architecture to guide the development of the electronic data exchange capability, and lack a strategy to explain how the pharmacy prototype will contribute toward determining the technical solution for achieving HealthePeople (Federal). As such, there continues to be no clear vision of how this capability will be achieved, and in what time period.

Compounding the challenge faced by the departments is that they continue to lack a fully established project management structure for the HealthePeople (Federal) initiative. As a result, the relationships between the departments' managers is not clearly defined, a lead entity with final decision-making authority has not been designated, and a coordinated, comprehensive project plan that articulates the joint initiative's resource requirements, time frames, and respective roles and responsibilities of each department has not yet been established. In discussing the need for these components, VA and DOD program officials stated this week that the departments had begun actions to develop a project plan and define the management structure for HealthePeople (Federal). In the absence of such components, the progress that VA and DOD have achieved is at risk of compromise, as is assurance that the ultimate goal of a common, exchangeable two-way health record will be reached.

Given the importance of readily accessible health data for improving the quality of health care and disability claims processing for military members and veterans, we currently have a draft report at the departments for comment, in which we are making recommendations to the Secretaries of Veterans Affairs and Defense for addressing the challenges to, and improving the likelihood of successfully achieving the electronic two-way exchange of patient health information.

Mr. Chairman and Members of the Subcommittee:

I am pleased to participate in today's continuing discussion of electronic health records and the Department of Veterans Affairs' (VA) and Department of Defense's (DOD) actions toward developing the capability to electronically exchange patient health information. In the face of terrorism, related military responses, and a general call for improved health care delivery, providing readily accessible medical data on active duty military personnel and veterans is more essential than ever to ensuring that these individuals receive high-quality health care and assistance in adjudicating any disability claims that they may have. The President's recently announced proclamation to provide electronic health records for most Americans within the next 10 years further highlights the significance and potential contributions of the departments' actions in pointing the way toward the delivery of more effective health care services.

For the past 6 years, VA and DOD have been working to achieve an electronic medical record and patient health information-sharing capability, beginning with a joint project in 1998 to develop a government computer-based patient record. As we noted in previous testimony,[1] the departments have achieved a measure of success in sharing data through the one-way transfer of health information from DOD to VA health care facilities. However, they have been severely challenged in their pursuit of a longer term objective—providing a virtual medical record based on the two-way exchange of patient health care information, as part of their Health*e*People (Federal) initiative. This past March, we reported that VA and DOD had made little progress in identifying a technological solution for achieving a two-way exchange of patient health data and lacked discipline in their approach to managing this initiative.

[1]U.S. General Accounting Office, *Computer-Based Patient Records: Sound Planning and Project Management Are Needed to Achieve a Two-Way Exchange of VA and DOD Health Data*, GAO-04-402T (Washington, D.C.: March 17, 2004) and *Computer-Based Patient Records: Short-Term Progress Made, but Much Work Remains to Achieve a Two-Way Data Exchange Between VA and DOD Health Systems*, GAO-04-271T (Washington, D.C.: November 19, 2003).

At your request, my testimony today will discuss our continuing assessment of VA's and DOD's progress in realizing the Health*e*People (Federal) goal of an electronic patient health record and two-way data exchange capability. In conducting this work, we reviewed the departments' documentation describing VA's and DOD's actions to develop new health information systems and determine a strategy for developing a secure, electronic two-way data exchange capability, including project schedules, project status reports, and conversion and deployment plans. We also reviewed documentation identifying the costs that the departments have incurred in developing technology to support the sharing of health data, including costs associated with achieving the one-way transfer of data from DOD to VA health care facilities, and ongoing projects to develop new health information systems. We did not audit the reported costs, and thus cannot attest to their accuracy or completeness. We supplemented our analyses of the agencies' documentation with interviews of VA and DOD officials responsible for key decisions and actions on the health data-sharing initiatives. We conducted our work in accordance with generally accepted government auditing standards, during May of this year.

## Results In Brief

VA and DOD are proceeding with actions intended to support the sharing of health data, but continue to be far from achieving the two-way electronic data exchange capability envisioned in the Health*e*People (Federal) strategy. The departments are continuing to take actions to develop their individual health information systems that are critical to exchanging patient health information and to define data standards that are essential to the common sharing of health information. In addition, department officials stated that they are proceeding with a pharmacy data prototype initiative, begun in March, to satisfy a mandate of the Bob Stump National Defense Authorization Act for Fiscal Year 2003,[2] as an

[2]P.L. 107-314, sec. 724 (2002).

initial step toward achieving Health*e*People (Federal). At this stage, however, they have not developed a strategy to explain how this project will contribute to defining the technological solution for the data exchange capability. As such, VA and DOD continue to lack a clearly defined architecture and technological solution for developing the electronic interface and associated capability for exchanging patient health information between their new systems. Moreover, the departments remain challenged to articulate a clear vision of how this capability will be achieved, and in what time frame.

Further compounding the challenge and uncertainty that VA and DOD face is that they continue to lack a fully established project management structure for this undertaking. The relationships among management entities involved with the Health*e*People (Federal) initiative have not been clearly established and the departments have not designated a lead entity with final decision-making authority for the initiative to ensure that decision making and oversight will not be blurred across management entities. In addition, while the departments have designated a manager for the pharmacy data prototype project that they view as an initial step toward defining electronic data exchange technology, they do not yet have a comprehensive and coordinated project plan for the Health*e*People (Federal) initiative to articulate the time frames, resource requirements, and roles and responsibilities of VA and DOD officials charged with designing, developing, and implementing the electronic interface capability. The departments also have not instituted project review milestones and measures that provide a basis for comprehensive management, progressive decision making, and authorization of funding for each step in the development process. In discussing their management of Health*e*People (Federal), VA and DOD program officials stated this week that the departments had begun developing a project plan and defining the management structure for this initiative.

Absent a comprehensive and coordinated approach to implementing and conveying information about Health*e*People (Federal), VA and DOD risk compromising their progress and lack assurance that the goals of this initiative will be successfully realized. Given the importance of readily accessible health data for improving the

quality of health care and disability claims processing for military members and veterans, we currently have a draft report at the departments for comment, in which we are making recommendations to the Secretaries of Veterans Affairs and Defense for addressing the challenges to and improving the likelihood of successfully achieving the electronic two-way exchange of patient health information.

## Background

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 toward achieving the capability to share patient health information for active duty military personnel and veterans.[3] As their first initiative, undertaken in that year, the Government Computer-Based Patient Record (GCPR) project was envisioned as 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 agencies' 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.

Our prior reviews of the GCPR project 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. Accordingly, reporting on this project in April 2001 and again in June 2002,[4] we made several recommendations to help strengthen the management and

[3]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.

[4]U.S. General Accounting Office, *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.: April 30, 2001).

oversight of GCPR. Specifically, 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 electronically sharing patient health data. The two departments had renamed the project the Federal Health Information Exchange (FHIE) program and, consistent with our prior recommendation, had finalized a memorandum of agreement designating VA as the lead entity for implementing the program. This agreement also established FHIE as a joint activity that would allow the exchange 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) to a separate database that VA clinicians could access. A second phase, finalized this past March, 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 program officials, FHIE is now fully operational and is showing positive results by providing a wide range of health care information to enable clinicians to make more informed decisions regarding the care of veterans and to facilitate processing disability claims. The officials stated that the departments have now begun leveraging the FHIE infrastructure to achieve interim exchanges of health information on a limited basis, using existing health systems

at joint VA/DOD facilities.[5] The departments reported total GCPR/FHIE costs of about $85 million through fiscal year 2003.

The revised strategy also envisioned achieving a longer term, two-way exchange of health information between DOD and VA. Known as Health*e*People (Federal), this initiative is premised upon 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 required by VA's and DOD's health care providers between systems that each department is currently developing—DOD's Composite Health Care System (CHCS) II and VA's Health*e*Vet VistA.

DOD began developing CHCS II in 1997 and has completed its associated clinical data repository—a key component for the planned electronic interface. The department expects to complete deployment of all of its major system capabilities by September 2008.[6] It reported expenditures of about $464 million for the system through fiscal year 2003. VA began work on Health*e*Vet VistA and its associated health data repository in 2001, and expects to complete all six initiatives comprising this system in 2012.[7] VA reported spending about $120 million on Health*e*Vet VistA through fiscal year 2003.

[5]VA and DOD officials stated that these efforts were not expected to contribute to determining the technological solution for a two-way data exchange between VA's and DOD's new health information systems but, instead, constituted attempts toward facilitating the sharing of health data in the absence of the longer term capabilities that Health*e*People (Federal) is expected to provide.

[6]DOD's CHCS II capabilities are being deployed in blocks. Block 1 provides a graphical user interface for clinical outpatient processes; block 2 supports general dentistry; block 3 provides pharmacy, laboratory, radiology, and immunizations capabilities; block 4 provides inpatient and scheduling capabilities; and block 5 will provide additional capabilities as defined.

[7]The six initiatives that make up Health*e*Vet VistA are health data repository, billing replacement, laboratory, pharmacy, imaging, and appointment scheduling replacement.

Under the HealthePeople (Federal) initiative, VA and DOD envision that, upon entering military service, a health record for the service member will be created and stored in DOD's CHCS II clinical data repository. The record will be updated as the service member receives medical care. When the individual separates from active duty and, if eligible, seeks medical care at a VA facility, VA will then create a medical record for the individual, which will be stored in its health data repository. Upon 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 seeks 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. VA officials anticipated being able to exchange some degree of health information through an interface of their health data repository with DOD's clinical data repository by the end of 2005.

## Progress Toward Achieving HealthePeople (Federal) Faces Continued Challenges and Risks

As we have noted,[8] achieving the longer term capability to exchange health data in a secure, two-way electronic format between new health information systems that VA and DOD are developing is a challenging and complex undertaking, in which success depends on having a clearly articulated architecture, or blueprint, defining how specific technologies will be used to deliver the capability. Developing, maintaining, and using an architecture is a best practice in engineering information systems and other technological

[8]GAO-04-402T.

solutions, articulating, for example, the systems and interface requirements, design specifications, and database descriptions for the manner in which the departments will electronically store, update, and transmit their data.

Successfully carrying out the initiative also depends 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. Such planning involves developing and using a project management plan that describes, among other factors, the project's scope, implementation strategy, lines of responsibility, resources, and estimated schedules for development and implementation.

Currently, VA and DOD are proceeding with the development of their new health information systems and with the identification of standards that are essential to sharing common health data. DOD is deploying its first release of CHCS II functionality (a capability for integrating DOD clinical outpatient processes into a single patient record), with scheduled completion in June 2006. For its part, VA continues to work toward completing a prototype for the department's health data repository, scheduled for completion at the end of next month. In addition, as we reported in March, the departments have continued essential steps toward standardizing clinical data, having adopted data and message standards that are important for exchanging health information between disparate systems.[9] Department officials also stated that they were proceeding with a pharmacy data prototype initiative, begun in March to satisfy a mandate of the Bob Stump National Defense Authorization Act for

[9]VA and DOD, along with the Department of Health and Human Services, have been active participants in the Consolidated Health Informatics initiative. As part of this initiative, the Secretary of Health and Human Services announced in early May the adoption of 15 new standards to enable the exchange of health information.

Fiscal Year 2003,[10] as an initial step toward achieving Health*e*People (Federal). The officials maintain that they expect to be positioned to begin exchanging patient health information between their new systems on a limited basis in the fall of 2005, identifying four categories of data that they expect to be able to exchange: outpatient pharmacy data, laboratory results, allergies, and patient demographics.

However, VA's and DOD's approach to meeting this Health*e*People (Federal) goal is fraught with uncertainty and lacks a solid foundation for ensuring that this mission can be successfully accomplished. As we reported in March, the departments continue to lack an architecture detailing how they intend to use technology to achieve the two-way electronic data exchange capability. In discussing their intentions for developing such an architecture, VA's Deputy Chief Information Officer for Health stated last week that the departments do not expect to have an established architecture until a future unspecified date. He added that VA and DOD planned to take an incremental approach to determining the architecture and technological solution for the data exchange capability. He explained, for example, that they hope to gain from the pharmacy data prototype project an understanding of what technology is necessary and how it should be deployed to enable the two-way exchange of patient health records between their data repositories. VA and DOD reported approval of the contractor's technical requirements for the prototype last month and have a draft architecture for the prototype. They expect to complete the prototype in mid-September of this year.

Although department officials consider the pharmacy data prototype to be an initial step toward achieving Health*e*People (Federal), how

[10]Sec. 724 of the act mandates that the Secretaries of Veterans Affairs and Defense seek to ensure that, on or before October 1, 2004, the two departments' pharmacy data systems are interoperable for VA and DOD beneficiaries by achieving real-time interface, data exchange, and checking of prescription drug data of outpatients and using national standards for the exchange of outpatient medication information. The act further states that if the specified interoperability is not achieved by that date, then the Secretary of Veterans Affairs shall adopt DOD's Pharmacy Data Transaction System for VA's use.

and to what extent the prototype will contribute to defining the electronic interface for a two-way data exchange between VA's and DOD's new health information systems are unclear. Such prototypes, if accomplished successfully, can offer valuable contributions to the process of determining the technological solution for larger, more encompassing initiatives. However, ensuring the effective application of lessons learned from the prototype requires that VA and DOD have a well-defined strategy to show how this project will be integrated with the HealthePeople (Federal) initiative. Yet VA and DOD have not developed a strategy to articulate the integration approach, time frames, and resource requirements associated with implementing the prototype results to define the technological features of the two-way data exchange capability under HealthePeople (Federal). Until VA and DOD are able to determine the architecture and technological solution for achieving a secure electronic systems interface, they will lack assurance that the capability to begin electronically exchanging patient health information between their new systems in 2005 can be successfully accomplished.

In addition to lacking an explicit architecture and technological solution to guide the development of the electronic data exchange capability, VA and DOD continue to be challenged in ensuring that this undertaking will be managed in a sound, disciplined manner. As was the situation in March, VA and DOD continue to lack a fully established project management structure for the HealthePeople (Federal) initiative. The relationships among the management entities involved with the initiative have not been clearly established, and no one entity has authority to make final project decisions binding on the other. As we noted during the March hearing, the departments' implementation of our recommendation that it establish a lead entity for the Government Computer-Based Patient Record project helped strengthen the overall accountability and management of that project and contributed to its successful accomplishment.

Further, although the departments have designated a project manager and established a project plan defining the work tasks and management structure for the pharmacy prototype, they continue to lack a comprehensive and coordinated project plan for

HealthePeople (Federal), to explain the technical and managerial processes that have been instituted to satisfy project requirements for this broader initiative. Such a plan would include, among other information, details on the authority and responsibility of each organizational unit; the work breakdown structure and schedule for all of the tasks to be performed in developing, testing, and deploying the electronic interface; as well as a security plan. The departments also have not instituted necessary project review milestones and measures to provide a basis for comprehensive management of the project at critical intervals, progressive decision making, or authorization of funding for each step in the development process. As a result, current plans for the development of the electronic data exchange capability between VA's and DOD's new health information systems do not offer a clear vision for the project or demonstrate sufficient attention to the effective day-to-day guidance of and accountability for the investments in and implementation of this capability. In discussing their management of HealthePeople (Federal), VA and DOD program officials stated this week that the departments had begun actions to develop a project plan and define the management structure for this initiative.

Given the significance of readily accessible health data for improving the quality of health care and disability claims processing for military members and veterans, we currently have a draft report at the departments for comment, in which we are recommending to the Secretaries of Veterans Affairs and Defense, a number of actions for addressing the challenges to, and improving the likelihood of, successfully achieving the electronic two-way exchange of patient health information.

In summary, VA's and DOD's pursuit of various initiatives to achieve the electronic sharing of patient health data represents an important step toward providing more high-quality health care for active duty military personnel and veterans. Moreover, in undertaking HealthePeople (Federal), the departments have an opportunity to help lead the nation to a new frontier of health care delivery. However, the continued absence of an architecture and defined technological solution for an electronic interface for their new health information systems, coupled with the need for more comprehensive and coordinated management of the projects

supporting the development of this capability, elevates the uncertainty about how VA and DOD intend to achieve this capability and in what time frame. Until these critical components have been put into place, the departments will continue to lack a convincing position regarding their approach to and progress toward achieving the Healthy People (Federal) goals and, ultimately, risk jeopardizing the initiative's overall success.

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, or Valerie C. Melvin, Assistant Director, at (202) 512-6304 or at melvinv@gao.gov. Other individuals making key contributions to this testimony include Barbara S. Oliver, J. Michael Resser, and Eric L. Trout.

(310716)

**Statement of**
**Jonathan B. Perlin, MD, PhD, MS, MACP**
**Acting Under Secretary for Health**
**Department of Veterans Affairs**
**Before the**
**Subcommittee on Oversight and Investigations**
**Committee on Veterans' Affairs**
**U.S. House of Representatives**

**May 19, 2004**

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the importance of electronic health records and the role of the Department of Veterans Affairs (VA) in the development, use, and sharing of this valuable technology. With me today are Dr. Robert M. Kolodner, who is VA's Acting Deputy CIO for Health and VHA's Acting Chief Health Informatics Officer, and Dr. Robert Lynch, Director of Veterans Integrated Service Network 16.

Two weeks ago, President Bush outlined an ambitious plan to ensure that most Americans have electronic health records within 10 years. The President noted a range of benefits possible with the expanded use of information technology, including improved health care quality; reduced frequency of medical errors; advancements in the delivery of appropriate, evidence-based medical care; greater coordination of care among different providers; and increased privacy and security protections for personal health information.

In addition to these benefits, the transition from a paper-based medical record to an electronic health record (EHR) brings with it cost-saving efficiencies in how information is managed. In a paper-based environment, a lot of time is spent simply handling paper. Entire jobs are devoted to filing, retrieving, copying, distributing, and tracking paper records and radiology films. The implementation of an EHR does not eliminate these activities altogether, but it does drastically reduce clinicians' dependence on hard-copy information. Clinicians are able to access the information they need without requesting it from the file room or searching through stacks of files in their offices. Medical records and radiology films can be accessed on-line, so that there is no need to repeat studies when test results or films cannot be located. With an EHR, most VA sites have been able to decrease the space devoted to file rooms, retrain staff members to perform data management tasks, and reduce the costs associated with printing, duplicating, and maintaining hard-copy records and films.

For decades, VA has developed innovative IT solutions to support health care for veterans. Over the past several years, VA has worked with federal, state, and industry partners to broaden the use of information technology in health care. VA strives to continue the development of the EHR while protecting the privacy of our veteran population and maintaining the integrity of our systems. These efforts have laid the groundwork for the President's health IT initiative.

With one of the most comprehensive electronic health record (EHR) systems in use today, VA is a recognized leader in the development and use of EHRs and other information technology tools. Beginning in the late 1970's – before such tools were commercially available – Veterans Health Administration (VHA) developed software applications for a variety of care settings, including inpatient, outpatient, and long-term care. These applications form the foundation of VistA – the Veterans Health Information Systems and Technology Architecture, the automated health information system used throughout VHA.

In the mid-1990's, VHA embarked on an ambitious effort to improve the coordination of care by providing integrated access to these applications through implementation of an electronic health record, known as the Computerized Patient Record System or CPRS.

With CPRS, providers can access patient information at the point of care – across multiple sites and clinical disciplines. CPRS provides a single interface through which providers can update a patient's medical history, submit orders, and review test results and drug prescriptions. The system has been implemented at all VA medical centers nationwide and at VA outpatient clinics, nursing homes, and other sites of care.

*The Benefits of Electronic Health Records*

Electronic health records are appealing for a number of reasons. *The most compelling reason to use information technology in health care is that it helps us provide better, safer, more consistent care to all patients.* The President referred to a 1999 report in which the Institute of Medicine (IOM) estimated that between 44,000 and 98,000 Americans die each year due to medical errors. Many more die or suffer permanent disabilities because of inappropriate or missed treatments in ambulatory care settings. IOM cited the development of an electronic health record as essential for reducing these numbers and improving the safety of health care. In its 2002 publication *Leadership by Example*, IOM noted that "[c]omputerized order entry and electronic medical records have been found to result in measurably improved health care and better outcomes for patients."

How can EHRs improve patient safety and quality of care? First, with an EHR, all relevant information is available – and legible. A provider can quickly review information from previous visits, have ready access to clinical guidelines, and

survey research results to find the latest treatments and medications. All of this information is available wherever patients are seen – in acute settings, clinics, examining rooms, nursing stations, and offices. With CPRS, providers can quickly flip through electronic "pages" of a patient's record to review or add information. All components of a patient's medical record – including progress notes, referrals, orders, test results, images, medications, advance directives, future appointments, and demographic data – are readily accessible at the point of care.

Many of us see different doctors for different medical conditions. How many of these physicians have access to all of the information that has been collected over the course of these visits? In VHA, patient records from multiple sites and different providers can be viewed at the same time at the point of care. This is simply not possible with paper records. Additionally, most clinicians find EHRs more convenient to use than traditional paper records. They are less cluttered, easier to read, and faster and more reliable for finding items of information providers are seeking, such as the results of a specific type of laboratory test over a period of time.

In addition to making medical records more accessible, EHRs can help clinicians better document the reasons a patient sought care and the treatment that was provided. Given the time constraints they face, many physicians resort to writing brief, sometimes cryptic notes in a patient's chart, and then write more complete documentation when they have time. EHRs enable clinicians to document care quickly and thoroughly, and provide reminders to complete any documentation that is overdue.

CPRS, for example, allows clinicians to enter progress notes, diagnoses, and treatments for each encounter, as well as discharge summaries for hospitalizations. Clinicians can order lab tests, medications, diets, radiology tests, and procedures electronically; record a patient's allergies or adverse reactions to medications; or request and track consults with other providers.

More information isn't always better if we can't use it. Even if we could transfer paper records quickly and reliably from one provider to another, and make sure that the information in records was complete, many hard-copy patient records simply contain too much information for a clinician to sift through effectively. There is always the possibility that something crucial could be missed. When health information is stored electronically, however, we can make use of software tools to analyze that information in real-time. We can target relevant information quickly, compare results, and use built-in order checks and reminders to support clinical decision-making. These capabilities promote safer, more complete, more systematic care.

Consider the benefits we have seen in VHA in the area of medication ordering. When orders for medications are handwritten or given verbally, errors and

mistakes inevitably occur. However, when physicians use computerized order-entry systems to enter medication orders electronically, errors caused by illegible handwriting or misinterpretation of dosages, strengths, or medication names are virtually eliminated. CPRS includes automated checks for drug-drug or drug-allergy interactions, alerting the prescribing physician when potentially dangerous combinations occur. Currently, 93% of all VHA medication orders are entered directly by the ordering provider.

Information technology can also serve to reduce the number of errors that occur when medications are given to a patient. VHA's Bar Code Medication Administration system (BCMA) is designed to ensure that each patient receives the correct medication, in the correct dose, at the correct time. In addition, the system reduces reliance on human short-term memory by providing real-time access to medication order information at the patient's bedside.

BCMA provides visual alerts – prior to administration of a medication – when the correct conditions are not met. For example, alerts signal the nurse when the software detects a wrong patient, wrong time, wrong medication, wrong dose, or no active medication order. These alerts require the nurse to review and correct the reason for the alert before actually administering the drug to the patient. Order changes are communicated instantaneously to the nurse administering medications eliminating the dependence on verbal or handwritten communication of order changes. Time delays are avoided and administration accuracy is improved.

BCMA also provides a system of reports to remind clinical staff when medications need to be administered or have been overlooked, or when the effectiveness of administered doses should be assessed. The system also alerts staff to potential allergies, adverse reactions, and special instructions concerning a medication order, and order changes that require action.

*The Importance of Standards*

The use of electronic health records and other information technology tools in a single medical office can improve health care quality, reduce medical errors, improve efficiency, and reduce costs for the patients treated there. However, as the President noted, the full benefits of IT will be realized when we have a coordinated, national infrastructure to accelerate the broader adoption of health information technology.

The National Health Information Infrastructure (NHII) initiative recognizes the importance of data and communications standards in developing a comprehensive network of interoperable health information systems across the public and private sectors. Interoperability is dependent, in large part, upon the adoption of common standards. Without data standards, we might be able to exchange health information, as we do now when we copy and send paper records, but we won't be

able to use it as effectively to deliver safer, higher quality care using clinical alerts and reminders.
VA was instrumental in the formation of the interagency Consolidated Health Informatics (CHI) initiative, and works closely with the Department of Defense (DoD) and the Department of Health and Human Services (DHHS) on CHI and related projects. CHI, which is part of the President's eGov initiative, was established to foster the adoption of federal interoperability standards related to health care as part of a joint strategy for developing an electronic health record. To date, CHI has endorsed 20 communications and data standards, in areas such as laboratory, radiology, pharmacy, encounters, diagnoses, and nursing information.

We have seen the value of standards within VHA. Like other EHRs, CPRS allows users to search for specific medical terms, dates of care, diagnoses, and other information quickly, without having to review multiple documents. Although this search feature is a handy tool, information retrieval can be hampered by a lack of standard naming conventions. Virtually all clinical documents throughout VHA are stored in CPRS; as a result, patient records containing hundreds, or even thousands, of notes are becoming common. As the volume of online information increases, the task of finding a specific note or report among them can be difficult, particularly when different clinicians and sites assign different names to similar documents.

A 2001 article in the Journal of the American Medical Informatics Association described VHA's efforts to speed retrieval of clinical information, by creating a controlled terminology for indexing the information stored in CPRS.[1] This collaborative effort among clinicians, informaticists, and health information management professionals will improve document selection, and support the ability to transfer and incorporate documents from other facilities.

The ability to aggregate and compare information from multiple care sites has reinforced the importance of standardization for computable data as well. VHA is developing a Health Data Repository to store clinical information transmitted from VHA sites across the country. The repository will provide a central source of data for analysis, management reporting, performance monitoring, and research. Yet, the ability to aggregate these data from different sites will depend on the degree to which data fields are standardized.

*Data Standards and Interoperability*

Our data standardization efforts have also improved our ability to share information with other agencies. In accordance with the various

[1] Brown, Steven H., MS, MD, et. al. "Derivation and Evaluation of a Document-naming Nomenclature." *Journal of the American Medical Informatics Association* 8, no. 4 (2001): 379 - 389.

confidentiality statutes and regulations governing these records, including the Privacy Act, the HIPAA Privacy Rule, and several agency-specific authorities, safeguards have been implemented to ensure that the privacy of individuals is protected throughout these collaborative projects.

I'd like to highlight our work with the Department of Defense. To support the transition of individuals from active-duty to veteran status, the optimal use of health resources through sharing agreements, and VA-DoD collaborations on deployment health issues and health conditions, we need to exchange clinically relevant health data between the departments – and we need to exchange it electronically.

To this end, VA and DoD have developed a joint strategy to ensure the development of an interoperable electronic health record by 2005. The approach is described in the Joint VA/DoD Electronic Health Records (EHR) Plan – HealthePeople (Federal) strategy and includes three components: 1) joint adoption of global information standards, 2) collaborative software application development/acquisition, and 3) development of interoperable data repositories. The EHR Plan provides for the exchange of health data by the departments and for the development of a health information infrastructure and architecture supported by common data, communications, security, and software standards and high-performance health information systems.

The EHR Plan will guide VA and DoD in the joint development of a "virtual" health record accessible by authorized users throughout DoD and VA. This virtual health record will be achieved through the transparent interaction of health systems or applications between DoD and VA. Providers of care in both departments will be able to access relevant medical information to aid them in patient care.

In support of the President's Management Agenda, the President's Task Force (PTF) to Improve Health Care Delivery For Our Nation's Veterans provided recommendations for the departments' goals to provide a seamless transition from military to veteran status, including the virtual health record. Primary governance of these joint efforts is the responsibility of the Congressionally-mandated VA/DoD Health Executive Council (HEC) and Joint Executive Council (JEC).

The first phase of the plan, the Federal Health Information Exchange (FHIE), was deployed July 2002. FHIE provides historical data on separated and retired military personnel and beneficiaries from DoD's Composite Health Care System (CHCS) to the FHIE framework; the information is then accessible in VA through CPRS. These data include DoD admission/discharge/transfer (ADT) information, laboratory information, radiology, discharge summary and cytology reports, allergy information, consultation reports, prescription data from government and retail pharmacies from the DoD Pharmacy Data Transaction Service (PDTS), and outpatient associated medical codes extracted from the DoD Standard Ambulatory Data Record (SADR). Currently, there are over two million unique DoD electronic records available for

retrieval from the FHIE repository, and the volume of information available through FHIE continues to grow as individuals are discharged to veteran status.
The next phase of the EHR Plan is the joint development and acquisition of interoperable data repositories by the departments. The departments have formed an active working integrated project team to implement the exchange of clinical data between the VA Health Data Repository (HDR) and the DoD Clinical Data Repository (CDR). By linking these two systems, the departments will achieve interoperability of health information between DoD's CHCS II and VA's HealtheVet-VistA. This project, known as "CHDR", will demonstrate the bi-directional capability to exchange pharmacy and demographic data in a prototype in 2004, and will achieve interoperability by 2005. Using clinical decision support applications, providers in both departments will be able to access and use relevant health information to aid them in making medication decisions for their patients, regardless of whether that information resides in VA's or DoD's information systems.

Other examples of VA-DoD work include the DoD/VA Interagency Virtual Private Network (VPN), which allows for the secure exchange of clinical data between the two departments, and the Laboratory Data Sharing and Interoperability Project (LDSI), which allows DoD to act as a reference lab for chemistry tests performed for the VA. VA orders are entered electronically in CPRS and are transferred to CHCS via a secure VPN connection; results are returned electronically to VA. Turnaround times are much quicker and patient safety is enhanced because manual entry of the results into CPRS is eliminated. The LDSI application is currently uni-directional and is being enhanced to support the bi-directional exchange of orders and results between VA and DoD, so that each agency can serve as a reference lab for the other.

Another collaborative project is the DoD/VA Consolidated Mail-out Pharmacy (CMOP) Interface. In this project, military beneficiaries treated at Naval Base Coronado, Naval Air Station, San Diego, California, and Kirtland Air Force Base, Albuquerque, New Mexico, can choose to have their outpatient prescriptions filled by the CMOP at Fort Leavenworth, Kansas, and mailed to them rather than having to wait and pick up prescriptions at the pharmacies in the military treatment facility. The VA fills an average of 8,000 orders and 10,000 prescriptions per week for the two military treatment facilities.

Mr. Chairman, we have recently reviewed GAO's draft report, Computer-Based Patient Records: VA and DOD Efforts to Exchange Health Data Could Benefit from Improved Planning and Project Management, (Report No. GAO-04-687) and generally concur with their recommendations and are actively working to address them. VA and DoD are currently developing a final architecture for the electronic interface between the agencies' health information systems. We also have implemented a joint project management structure that includes a single Program Manager from VA and a single Deputy Program Manager from DoD. This structure ensures joint accountability and day-to-day responsibility for

project implementation. I want to assure the Subcommittee that developing the technology to support the exchange patient health care data and the creation of an electronic medical record for both veterans and active duty personnel remains a priority for VA. We believe that the plan being pursued, although challenging and complex, will provide the necessary flexibility while achieving the desired interface between VA and DOD.

VA and DoD are optimistic that as a result of the improved collaboration between the two departments in these joint IT initiatives, both will be better positioned to evaluate health problems among service members after they leave military service, veterans, and shared beneficiary patients; to address short- and long-term post-deployment health questions; and to document any changes in health status that may be relevant for determining disability.

*VistA-Lite*

As a physician, I have seen first-hand the benefits of electronic health records in VHA: immediate access to information, elimination of duplicate orders, increased patient safety, improved information-sharing, more advanced tracking and reporting tools, and reduced costs. CPRS has been enhanced and refined continuously since its initial implementation, and has been recognized by IOM and in the mainstream press as one of the most sophisticated EHR systems in the world. Although VistA and CPRS were developed specifically to support the VA model of care, they were designed with flexibility and adaptability in mind. As VA has shifted its focus from inpatient, institutional care to an ambulatory, primary care model in recent years, we have updated and enhanced our information systems to support different care settings, adding new "smart" software features, incorporating new technologies, and developing better methods of coordinating data from multiple sites. In fact, VA's EHR was altered for use in both DoD and Indian Health Service. By the mid 1990's the three largest federal systems providing direct health care were using derivatives of VA's EHR, although only VA was using the current and more robust version including CPRS.

VistA and CPRS are in the public domain. They have been adopted for use in the District of Columbia's Department of Health, American Samoa, and several state health departments and state veterans homes. A number of countries, including Germany, Finland, Great Britain, Mexico, and Ireland, have either implemented VistA or expressed an interest in acquiring the technology.

VHA is now working with the Centers for Medicare and Medicaid Services (CMS) to make the benefits of electronic health records available to other providers. VA and CMS are collaborating on the development of a "VistA-Lite" version of VA's VistA system. VistA-Lite will be designed specifically for use in clinics and physician offices. In developing VistA-Lite, VHA and CMS hope to stimulate the

broader adoption and effective use of electronic health records by making a robust, flexible EHR product available in the public domain.

VistA-Lite will be based on VistA, but will be streamlined and enhanced to make it appropriate and affordable for use outside VA. For example, patient registration features of VistA will be modified to reflect the requirements of smaller medical practices. Specialty components, such as OB/GYN and Pediatrics, will be enhanced. The VistA operating environment will be streamlined so that installation and maintenance are simplified. Vista-Lite can be adopted directly by physician offices, used by vendors who provide administrative support services to physician offices, or used by commercial software developers to make competitively-priced products with similar functionality. Private developers, physician organizations, and health care purchasers have been made aware of the VistA-Lite project and the response has been favorable.

The VistA-Lite project is co-managed by CMS and VHA, and is coordinated with other federal agencies, including the Indian Health Service, Health Resources and Services Administration, the Centers for Disease Control (CDC), and the Food and Drug Administration (FDA). The project is funded by CMS. The first version of the VistA-Lite system is expected to be available in November. Subsequent releases will reflect changes and improvements made to the core VistA system and will be developed in conjunction with participating agencies.

Many providers and communities are eager to use EHR technology, but don't know where to start. For providers who have not used an EHR before, it is difficult to determine which capabilities are needed in a particular setting. To assist health organizations in the comparison and selection of EHRs, Health Level Seven (HL7®), an international standards development organization, has established an industry-wide initiative to define a set of standard functions for electronic health records, and to recommend the high-level, care-related functions appropriate for different care settings. VHA worked with HHS to commission the development of the standard, and a VHA nurse informaticist co-chairs the HL7® EHR Special Interest Group, which manages this initiative.

The HL7® EHR standard is intended to set the benchmark for electronic health records, through broad public- and private-sector participation and consensus on required EHR functionality. This approach promotes a common industry EHR focus, but allows sufficient latitude for commercial product differentiation, fostering competition and innovation among developers of EHR systems. The HL7® EHR model will enable HHS and others to qualify EHR systems in terms of completeness and readiness for adoption.

*Personal Health Records and My HealtheVet*

The development of personal health records is another area of focus in health information technology. Personal health records are an adjunct to the electronic health records used in a clinical setting, providing patients a secure means of maintaining copies of their medical records and other personal health information they deem important. Information in a personal health record is the property of the patient; it is the patient who controls what information is stored and what information is accessible by others. Personal health records enable patients to consolidate information from multiple providers without having to track down, compile, and carry around copies of paper records. By simplifying the collection and maintenance of health information, personal health records encourage patients to become more involved in the health care decisions that affect them.

Last year, VHA responded to more than 1 million requests from veterans for paper copies of their health information. Such requests are processed through Release of Information offices at VA Medical Centers. As the use of personal computers among veterans has increased, so has the interest in electronic access to medical information.

The VHA My HealtheVet project was conceived as a way to help veterans manage their personal health data. My HealtheVet is a secure, web-based personal health record system designed to provide veterans key parts of their VHA health record and to let them enter, view, and update their own health information. Patients who take over-the-counter medications or herbs, or who monitor their own blood pressure, blood glucose, or weight, for example, can enter this information in their personal health records.

The implications of My HealtheVet are far-reaching. Clinicians will be able to communicate and collaborate with veterans much more easily. With My HealtheVet, veterans are able to consolidate and monitor their own health records and share this information with non-VA clinicians and others involved in their care. Patients who take a more active role in their health care have been found to have improved clinical outcomes and treatment adherence, as well as increased satisfaction with their care.

The first version of My HealtheVet, released last fall, includes a library of information on medical conditions, medications, health news, and preventive health. Veterans will be able to use the system to explore health topics, research diseases and conditions, learn about veteran-specific conditions, understand medication and treatment options, assess and improve their wellness, view seasonal health reminders, and more. Subsequent releases will provide additional capabilities, enabling veterans to request prescription refills on-line, view upcoming appointments, and see co-payment balances.

In the future, veterans will be able to request and maintain a copy of key portions of their health records from VistA and to grant authority to view that information to family members, veterans' service officers, and VA and non-VA clinicians

involved in their care. VA is also working with DoD and other partner organizations to develop a longitudinal health record that will incorporate information from DoD, VA, and private-sector health providers from whom the veteran has sought care.

*Summary*

In announcing his plan to transform health care through the use of information technology, the President noted our country's long and distinguished history of innovation – as well as our failure to use health information technology consistently as an *integral* part of medical care in America. Health care is often compared unfavorably to other professions and industries in its use of information technology. Grocery stores, for example, are frequently mentioned as being "more automated" than hospitals. At first, this seems outrageous, yet it is not really surprising – treating patients is far more complex than grocery shopping.

We clearly have a long way to go in optimizing our use of information technology in health care; yet, we are not starting from scratch. Electronic health records, personal health records, data and communication standards, and sophisticated analytical tools – the building blocks of a comprehensive, national health information infrastructure – have already been implemented in some communities and settings and are maturing quickly. Our challenge is to create a technology infrastructure that will revolutionize health care without interfering with the human interaction between physicians and patients that is at the core of the art of medicine.

The President recognized America's medical professionals and the skill they have shown in providing high-quality health care despite our reliance on an outdated, paper-based system. At VHA, we know that the support of clinicians is essential to the successful implementation of electronic health records and new IT tools. Clinicians, while often the greatest proponents of health information technology, can also be the greatest critics. At VHA, physicians, nurses, and other providers are actively involved in defining requirements and business rules for systems, prioritizing enhancements, and conducting end-user testing. This involvement increases user acceptance, minimizes disruption during upgrades, and most importantly, enables us to tailor systems to the needs of the health care community.

In VHA, the electronic health record is no longer a novelty – it is accepted as a standard tool in the provision of health care. Our focus is now moving from technical implementation issues to those involving data quality, content, standardization, and greater interaction with other providers and systems. As VHA refines and expands its use of information technology, we look forward to sharing our systems and expertise with our partners throughout the health care

community to support the President's plan for transforming health care – and the health of our veterans.

Mr. Chairman, this completes my statement. My colleagues and I will now be happy to answer any questions that you or other members of the Subcommittee might have.

Prepared Statement

of

Mr. James C. Reardon

Military Health System, Chief Information Officer

on

# The Importance of Electronic Health Records and the Future Roles of the Department of Defense and Department of Veterans Affairs in Achieving This Goal on a Government-wide Basis

Before the

Subcommittee on Oversight and Investigations
Committee on Veterans' Affairs
U.S. House of Representatives
May 19, 2004

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***Introduction***

Mr. Chairman and distinguished members of this committee, thank you for the opportunity to discuss the collaborative efforts being made by the Department of Defense (DoD), the Department of Veterans Affairs (VA) and the Department of Health and Human Services (HHS), and how these efforts relate to the President's Technology Agenda involving the transformation of health care through health information technology. DoD/VA's efforts lay the foundation for the President's health technology plan of improving health care quality, reducing health care costs, preventing medical errors, improving administrative efficiencies, reducing paperwork, and increasing access through innovations in electronic medical records and the secure exchange of medical information.

***Department of Defense Health Technology***

The DoD Health Technology Program acquires, develops, deploys, and maintains superior Health Technology solutions and services in support of health care delivery provided by the Army, Navy, and Air Force. The Department continues to implement and sustain a secure standards-based, shared infrastructure in the support of essential health technology systems. This robust infrastructure ensures crucial health information is protected and available at the right time, to the right staff, around the clock, and around the world. This enables the continuation of critical e-business functions, enhances access to care and quality of care, and improves our ability to efficiently manage our business.

*Enterprise Architecture* We are focusing on enhancing our enterprise architecture to ensure that our information technology investments directly support military health care around the world and aligns with the Department's Business Management Modernization Program. We continue to refine our information technology capital investment and portfolio management process, ensuring that all proposed information technology investments are evaluated against objective, business focused criteria. Protecting sensitive beneficiary information is very important. To do so, we have implemented a strong information assurance program which addresses information security from electronic, physical, and personnel perspectives.

*Computerized Provider Order Entry (CPOE)* The Department has a long history of transforming health care delivery by using information technology. For more than a decade, DoD has led industry by using one of the world's first and largest hospital integrated enterprise CPOE systems that capture important patient information by automating the documentation of patient data for its nine million beneficiaries. The Composite Health Care System I (CHCS I) is deployed to over 500 DoD medical facilities worldwide, interfaces with more than 40 other clinical and administrative systems, documents over 50 million outpatient appointments, and performs 70 million prescription transactions yearly. DoD recognizes the value of secure and on-demand accessible computerized patient information as a substantive way to greatly enhance patient safety as well as the quality of health care delivery. CHCS I reduces patient wait time, increases patient access to medical resources, and allows faster and more efficient reporting of diagnostic test results. CHCS I permits health care providers to issue clear orders efficiently and effectively and enhances patients' safety through CPOE. CHCS I has made the quantum leap from paper to electronic order entry. It enables DoD providers to electronically order laboratory tests, retrieve test results, authorize radiology procedures, prescribe medications, and schedule appointments.

*Pharmacy Data Transaction Service (PDTS)* PDTS builds patient medication histories compiled from prescriptions filled at civilian pharmacies, through a mail-order pharmacy and at military treatment facilities. PDTS enhances patient safety and quality of medical care by reducing likelihood of: adverse drug-to-drug interactions; duplicate drugs prescribed to treat same condition; and same drug obtained from multiple sources. This service conducts online clinical screening against patient's complete medication history when processing new or refilled prescriptions. Additionally, PDTS issues alerts when prescribed medications could negatively interact with medications on record in PDTS. This important function has prevented over 99,000 potentially life-threatening drug interactions.

*TRICARE Online (TOL)* TOL is an enterprise-wide, secure Internet portal for use by DoD beneficiaries, providers, and health care managers worldwide. TOL provides access to health information, contact information for hospitals, clinics and providers, links to information on TRICARE services and benefits, as well as helpful resources such as disease management tools,

a drug interaction checker, and a personal health journal. TOL also enables TRICARE members to make appointments with primary care managers online. Future TOL services will include secure e-mail between patients and providers, the ability to request prescription refills, and automated support for provider referrals and authorization requests.

*Composite Health Care System II (CHCS II)* The Department is currently in the process of fielding CHCS II. CHCS II is a windows-based application that further enhances CHCS capabilities and provides a user-friendly interface with improved coding and expanded documentation of medical care. It is an enterprise-wide medical clinical information system that maintains and provides worldwide secure online access to comprehensive patient records, continuing the Department's military EMR effort. With this system, doctors and other medical workers can create and add to electronic medical records for the individuals they treat. CHCS II is secure, standards based, and patient centric, for use in our garrison based medical facilities to our forward deployed medical units. CHCS II 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, CHCS II stresses a team-based approach to health care and will improve 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. CHCS II meets the eight care delivery functions identified by the Institute of Medicine as essential for electronic health records to enhance safety, quality and efficiency of health care delivery. It centrally stores all electronic patient medical records in the Clinical Data Repository (CDR). CHCS II has received approval for full rate production and began worldwide deployment in January 2004.

***Departmental Collaboration***

Over the past year, the DoD/VA/HHS have launched a new era of Departmental collaboration, with unprecedented strides toward a new federal partnership. Through our VA/DoD Health and Joint Executive Councils, we ensure leadership oversight is given to all of joint initiatives as we continue to develop our strategic partnership.

*Health Information Standards* DoD and VA are lead partners in the Consolidated Health Informatics project, one of the 24 eGov initiatives supporting the President's Management Initiative. The goal of the Consolidated Health Informatics initiative is to establish federal health information interoperability standards as the basis for electronic health data transfer in federal health activities and projects. In March 2003, the Department of Health and Human Services (HHS) announced the first set of standards to be adopted. They included standards in clinical laboratory results, health messaging, prescription drug codes, digital imaging, and connectivity of medical devices to computers. HHS recently adopted additional standards related to areas such as demographics, units, lab results contents, medications, lab test order names, and immunizations. The standards adopted will be used in new acquisitions and systems development initiatives. As federal entities use common standards it will be easier to exchange appropriate health information. DoD and VA are also leading partners in many national standards development efforts. Both Departments participate in multiple standards boards to collaborate and share expertise.

The DoD/VA standards convergence group continues to work towards leveraging synergies and avoiding duplication and inconsistencies with their respective Enterprise Architecture (EA) development. EA links the business mission, strategy, and processes of an organization to its Health Technology strategy. It is documented using multiple architectural models or views that show how the current and future needs of an organization will be met. Compatible DoD/VA architectures foster systems interoperability and information sharing both inside and between our agencies.

*Federal Health Architecture (FHA)* The Department is an active partner in the FHA initiative managed by HHS. FHA signifies an excellent opportunity to build partnerships throughout the

nation's health care environment in the development of an integrated and effective health information exchange network. FHA will enable the utilization of existing systems to meet health care delivery requirements while providing clear rules for the development of new tools for improved performance and access to health related information and services throughout the national health arena. DoD is co-lead on the Health Care Delivery – Electronic Health Record (EHR) Work Group formed in May 2004. The work group's initial focus is the federal EHR business architecture.

*Federal Health Information Exchange (FHIE)* FHIE is an excellent example departmental collaboration that markedly enhances continuity of care for our nation's veterans. FHIE leverages existing agency information systems to facilitate the electronic transfer of patient information from DoD to VA. The first phase included patient demographics and pharmacy, laboratory, and radiology information. Based on success in these areas, FHIE was further expanded to include discharge summaries, allergy data and consultation information. Information from the PDTS, which included mail order and retail pharmacy profiles, and the standard ambulatory data record which includes items, such as diagnostic codes, primary care manager, treatment provider, and clinical service. FHIE has sent information from DoD to VA on over 2.2 million veterans, including over 27.6 million laboratory, 28.4 million pharmacy, and 4.8 million radiology clinical messages, 400 thousand consult reports and 25 million Standard Ambulatory Data Records. FHIE is significant step towards the President's health information technology plan. FHIE is already showing that clinical data can be transferred from one health care system to another in a safe, secure manner.

*Joint Electronic Medical Record Interoperability (JEMR)* DoD and VA continue to build on the foundation of the Federal Health Information Exchange. The successful iterative development process used to develop FHIE will serve as a model for improved interoperability between DoD's CDR and VA's Health Data Repository (HDR). DoD and VA are in the process of finalizing the Joint Electronic Medical Records Interoperability Program (JEMR) Management Plan. JEMR responds to the VA/DoD Joint Strategic Plan objective of enabling efficient sharing of beneficiary data, medical records, and other information through secure and interoperable information management systems and to the President's Task Force to Improve Health Care

Delivery For Our Nation's Veterans recommendation. The JEMR Program Management Plan will guide how management oversight, progress reporting, and continued development will be accomplished. One of these projects is called Clinical Data Repository/Health Data Repository (CHDR). CHDR will enable clinicians from both Departments to access clinical information from the two repositories on shared patients. Projects such as this are laying the ground work for the clinical information exchange that will enable a consolidated view of health data from DoD and VA medical records. DoD has reviewed and concurs with the Government Accounting Office letter dated 14 May 2004 and is taking actions to implement their recommendations.

*CHDR Pharmacy Prototype* The initial interface between DoD's CDR and VA's HDR will be the pharmacy prototype. This interface will test the bi-directional exchange of outpatient pharmacy data to include patient demographics, outpatient pharmacy (MTF, mail order, and retail pharmacy network), laboratory, and allergy information in a laboratory environment, in 2005.

*CHCS/VistA Data Sharing Interface (DSI)* DSI continues the success experienced by FHIE towards furthering interoperability efforts between DoD and VA. The DSI Project is leveraging the existing FHIE and Department information systems (CHCS and VistA) to meet the current business need that clinicians have for real-time clinical data exchange for shared patients. The most significant recent development has been the finalization of an integration services contract for the development of a real-time, bi-directional local exchange of health information for DoD and VA joint venture sites and sites that have medical sharing agreements. The first phase of DSI will be deployed in FY05, and will support the exchange of allergy and pharmacy data. Lessons learned in the initiative will be captured and applied to future efforts focusing on bidirectional exchange between DoD's CDR and VA's HDR.

***Closing***

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 in a short period of time and the ground work has been laid for even greater progress in the future. Our shared commitment to strong DoD/VA/HHS 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 to expand the appropriate sharing of health information as systems and data repositories mature and standards and processes are further defined and implemented. Over the past year, working with the Services, VA, and key commercial business partners, we have implemented and enhanced information transport security and standards-based encryption capabilities to prevent the disclosure of confidential and sensitive protected health information. Exchanging health information between Departments will not only improve the quality of health care delivered, but will also establish an federal model for electronically exchanging medical records. Thank you for the opportunity to highlight our continued progress.

WRITTEN COMMITTEE QUESTIONS AND THEIR RESPONSES

CHAIRMAN BUYER TO DEPARTMENT OF DEFENSE

**Hearing Date: May 19, 2004**
**Committee: HVAC**
**Member: Chairman Steve Buyer**
**Witness: Mr. Reardon**
**Question #1**

**Question:**
**DoD's April 26 press release states that DoD meets or exceeds eight of the President's nine information technology goals. What are these eight goals?**

**Answer:**

- Improve health care quality.
- Reduce medical errors.
- Advance the delivery of appropriate, evidenced-based medical care.
- Reduce health care costs.
- Ensure information to guide medical decisions is available at the time and place of care.
- Improve the coordination of care and information.
- Provide an infrastructure for secure and authorized exchange of health care information.
- Ensure that patients' individually identifiable health information is secure and protected.

**Hearing Date: May 19, 2004**
**Committee: HVAC**
**Member: Chairman Steve Buyer**
**Witness: Mr. Reardon**
**Question #2**

**Question: Please provide total amount of money spent on CHCS I and CHCS II for their development and deployment.**

**Answer:**

- The estimated DoD investment for CHCS I development and deployment is $1.4 billion from Fiscal Year 1979 through Fiscal Year 2005.

- DoD has invested $464 million through Fiscal Year 2003 on the development and deployment of CHCS II.

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