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DEPARTMENT OF DEFENSE HEALTH INFORMATION TECHNOLOGY: AHLTA IS "INTOLERABLE," WHERE DO WE GO FROM HERE?

JOINT HEARING

BEFORE THE

MILITARY PERSONNEL SUBCOMMITTEE

MEETING JOINTLY WITH

TERRORISM, UNCONVENTIONAL THREATS AND CAPABILITIES SUBCOMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

HEARING HELD
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DEPARTMENT OF DEFENSE HEALTH INFORMATION TECHNOLOGY: AHLTA IS "INTOLERABLE," WHERE DO WE GO FROM HERE?

HOUSE OF REPRESENTATIVES, COMMITTEE ON ARMED SERVICES, MILITARY PERSONNEL SUBCOMMITTEE, MEETING JOINTLY WITH TERRORISM, UNCONVENTIONAL THREATS AND CAPABILITIES SUBCOMMITTEE, *Washington, DC, Tuesday, March 24, 2009.*

The subcommittee met, pursuant to call, at 10:05 a.m., in room 2118, Rayburn House Office Building, Hon. Susan A. Davis (chairwoman of the Subcommittee on Military Personnel) presiding.

OPENING STATEMENT OF HON. SUSAN A. DAVIS, A REPRESENTATIVE FROM CALIFORNIA, CHAIRWOMAN, MILITARY PERSONNEL SUBCOMMITTEE

Mrs. DAVIS. The meeting will come to order. Good morning, everyone. We welcome you to the hearing. Today we will have a joint hearing of the Military Personnel Subcommittee and Terrorism and Unconventional Threats and Capabilities Subcommittee.

I would like to thank Chairman Smith, Vice Chairman McIntyre, and Ranking Member Wilson and Ranking Member Miller for this joint hearing. The Military Personnel Subcommittee is tasked with oversight of the defense health program, to include all operations of the Military Health System and the Terrorism and Unconventional Threats and Capabilities Subcommittee is tasked with the oversight of all Department of Defense information technology. This is clearly a topic where our responsibilities intersect, and I appreciate the willingness of the two subcommittees to cooperatively provide this oversight.

It is important to know that health information technology (IT) is handled differently by the Department of Defense (DOD) than most other IT programs, and it is currently centrally managed by the Office of the Assistant Secretary of Defense for Health Affairs/TRICARE Management Activity (HA/TMA).

At our hearing last week on medical military construction I observed that by using the word "different" I was not trying to say that it is bad different or good different. It is just different.

The Military Personnel Subcommittee held a member briefing about Military Health System IT, specifically problems with Armed Forces Health Longitudinal Technology Application (AHLTA) back in October of 2007. The original plan was for the members to be briefed by subject matter experts, but we were pleasantly surprised and impressed that the Assistant Secretary of Defense for Health Affairs, Director of the TRICARE Management Activity, Dr. Casscells, was able to attend, and also brought along the Deputy

Director of the Tricare Management Activity, Major General Elder Granger, and the Military Health System Chief Information Officer, Mr. Chuck Campbell.

During the briefing many promises were made about the plan to fix the system, and after the meeting a road map was provided to the members. However, the committee was surprised when the former President's fiscal year 2009 budget for the Department of Defense contained none of the initiatives from that road map. All that was included in the budget request was fielding of the dental module of AHLTA.

By the summer of 2008 as a result of the groundswell of provider dissatisfaction, Dr. Casscells met with the committee staff to admit that the state of the current system was unacceptable. In fact he described it as "intolerable" in a Government Executive interview, hence the title of our hearing today.

Dr. Casscells was clear that all options, to include scrapping the current system, were under consideration. One of the purposes of this hearing is for Health Affairs to present their plan for fixing the system. We are frustrated with how the Department has handled this issue given its importance to providing a medical support to our service members and their families. We expect to hear firm dates, hopeful to hear that for the development and fielding of the fixes or new systems as well as projected or already incurred costs.

First and perhaps most importantly we will hear from the services about what they require from the Department's health IT systems and just how involved the services are in the development, programming, and budgeting of these systems. We are fortunate to have with us today representatives from each of the services' Surgeon General: First, Lieutenant General Schoomaker, Surgeon General of the Army; Major General Green, Deputy Surgeon General of the Air Force; and Rear Admiral Cullison, Deputy Surgeon General of the Navy. Gentlemen, welcome.

Our second panel will be comprised of witnesses from the Office of the Secretary of Defense, and then we will make more detailed introduction before this panel offers their testimony.

We are delighted to have all of you with us. We hope that it will be a very productive hearing today.

[The prepared statement of Mrs. Davis can be found in the Appendix on page 45.]

Mrs. DAVIS. Mr. McIntyre, do you have some remarks?

STATEMENT OF HON. MIKE MCINTYRE, A REPRESENTATIVE FROM NORTH CAROLINA, VICE CHAIRMAN, TERRORISM, UNCONVENTIONAL THREATS AND CAPABILITIES SUBCOMMITTEE

Mr. MCINTYRE. Thank you. Thank you, Madam Chairwoman. As vice chairman of the Subcommittee on Terrorism, I, too, in this joint hearing would like to thank the chairwoman for holding this hearing with our Subcommittee on Terrorism, Unconventional Threats and Capabilities. Our two subcommittees have worked closely together over the past couple of years looking critically at the Department of Defense activities in developing and deploying health information technology solutions for military health care applications.

Chairman Adam Smith of our subcommittee asked that I share how important health care issues are to him and his regret that he could not be here this morning. But I wanted to say as vice chairman of the Subcommittee on Terrorism that we have been very focused on the IT issues, including the unique acquisition challenges posed by IT and the pressures imposed by the short development cycles of the commercial IT world.

Cooperating with the Military Personnel Subcommittee, Chairwoman Davis, to leverage their expertise and understanding of the health care world has been an ongoing partnership and we appreciate that, Madam Chairwoman. Today's hearing gets to the heart of two separate but related issues that will have broad implications on the future of not only the Department of Defense, but also wider issues encountered by the Federal Government as a whole, the application of IT to improve the delivery of military health care and acquisition of IT systems to meet DOD needs.

We have two impressive panels of witnesses, many of whom I got to speak to a little while ago. We appreciate your service to our Nation and your hard work for our warfighters and for their families. We want to make sure that we get a better appreciation of the requirements that you need addressed by military health IT solutions, as well as the daily challenges that you face in trying to utilize the systems that are currently available.

We want to make sure we have a better functioning and a user friendly system. It is equally important to hear from the system developers to find out what actions they are taking to address these concerns and what actions they believe are necessary to achieve better outcomes for the systems we deploy, as well as the services that are offered. Today's hearing will provide a baseline against which we will measure the Department's progress.

Thank you again, gentlemen, for being with us and thank you, Madam Chairwoman.

[The prepared statement of Mr. McIntyre can be found in the Appendix on page 47.]

Mrs. DAVIS. Thank you. Mr. Wilson, did you have some remarks?

STATEMENT OF HON. JOE WILSON, A REPRESENTATIVE FROM SOUTH CAROLINA, RANKING MEMBER, MILITARY PERSONNEL SUBCOMMITTEE

Mr. WILSON. Thank you, Chairwoman Davis. I appreciate joining our good friends on the Terrorism, Unconventional Threats and Capabilities Subcommittee today led by my long-time friend Vice Chairman Mike McIntyre and the extraordinary Ranking Member Jeff Miller for our hearing on the Military Health System's information technology and electronic health record. I welcome the distinguished members of our two panels.

A unique aspect of military service is that military members and their families move every few years. For that reason alone it is critical that the Department of Defense have an electronic health system that can follow our military wherever they happen to be, including in a combat zone. I know firsthand of its importance with four sons serving currently in the military. Two have served in Iraq, another in Egypt, and the fourth just joined the Army National Guard. We must have a Military Health System capable of

documenting health care provided to service members throughout their time in the military and be accessible to the Veterans Administration (VA) when they leave military service.

Thirty years ago the Department of Defense recognized the need for an electronic health system. To their credit the Department began the enormous task of developing and fielding a system designed not only to function as an electronic health record, but to also capture health data that could be used for population screening and medical surveillance.

Today we will hear from our witnesses about the DOD electronic health system known as AHLTA. While I applaud the Department for the tremendous effort it took to field this system, I have serious concerns about the state of the system today. The committee has heard from military doctors and nurses who use AHLTA that it is unreliable, difficult to use, and has decreased the number of patients that they can see each day. We have also heard that medical professionals leave the military because of their frustration with AHLTA.

I hope our military service witnesses here today will touch on what they believe needs to be done to make the system work for their medical professionals.

From the DOD witnesses I would appreciate their perspective on how they plan to fix the system to make it more reliable, user friendly and easier for our terrific military personnel to provide the best medical care to our troops and their families.

With that, I would like to thank our witnesses for participating in the hearing today. I look forward to your testimony.

[The prepared statement of Mr. Wilson can be found in the Appendix on page 48.]

Mrs. DAVIS. Thank you, Mr. Wilson. Mr. Miller, some comments as well?

STATEMENT OF HON. JEFF MILLER, A REPRESENTATIVE FROM FLORIDA, RANKING MEMBER, TERRORISM, UNCONVENTIONAL THREATS AND CAPABILITIES SUBCOMMITTEE

Mr. MILLER. Thank you, madam Chairman. Gentlemen, I have a written statement that I will ask be submitted into the record, but with that I would say that we have to get this right $4 billion later, and it appears that things are not working as advertised. We all know that electronic medical records are very critical. Certainly the speed in which a combat casualty is removed from the battlefield to higher levels of care, the importance of ensuring and treating physicians to have access to a patient's medical record and their history becomes even clearer. And stateside beneficiaries receive care at multiple facilities and as is the case with many veterans from the Department of Veterans Affairs further highlighting the importance of effectively transmitting medical information between providers.

Again $4 billion later. We have to get this right. And this subcommittee is a great opportunity to listen to the experts in the field. And with that, I yield back the balance of my time.

[The prepared statement of Mr. Miller can be found in the Appendix on page 50.]

Mrs. DAVIS. Thank you.

And now we will begin, General Schoomaker. Will you please start. We do have two panels this morning. We know that you have a great deal to say. To the extent you can keep that within five, three is great too, three or four minutes, that would be terrific, and we will have an opportunity for questions. Thank you very much.

STATEMENTS OF LT. GEN. ERIC B. SCHOOMAKER, USA, COMMANDING GENERAL, U.S. ARMY MEDICAL COMMAND, THE SURGEON GENERAL, U.S. ARMY; ACCOMPANIED BY LT. COL. HON S. PAK, USA, CHIEF MEDICAL INFORMATION OFFICER, U.S. ARMY; REAR ADM. THOMAS R. CULLISON, USN, DEPUTY SURGEON GENERAL, U.S. NAVY; ACCOMPANIED BY CAPT. ROBERT D. MARSHALL, USN, DIRECTOR OF MEDICAL INFORMATICS, BUREAU OF MEDICINE AND SURGERY, U.S. NAVY; AND MAJ. GEN. CHARLES B. GREEN, USAF, DEPUTY SURGEON GENERAL, U.S. AIR FORCE; ACCOMPANIED BY LT. COL. DONALD KOWALEWSKI, USAF, INTERNAL MEDICINE CONSULTANT TO THE AIR FORCE SURGEON GENERAL, U.S. AIR FORCE

STATEMENT OF LT. GEN. ERIC B. SCHOOMAKER

General SCHOOMAKER. Chairwoman Davis, Vice Chairman McIntyre, Representative Wilson and Representative Miller, and distinguished members of both subcommittees, thank you for the opportunity to discuss AHLTA, the electronic health record system for the Department of Defense, one of our most critical links to and enablers for improvements in the future health of the force and optimal clinical outcomes in the care of our patients and a major component in our strategy to ensure an affordable and sustainable health care benefit for the uniformed services.

Ma'am, with me today, I have my Chief Medical Information Officer. Lieutenant Colonel (Dr.) Hon Pak is an Army dermatologist, West Point graduate, very talented clinical infomatician, who is really leading our efforts within the Army with our Chief Information Officer to make this happen. I have also got my battle buddy, my Command Sergeant, Major Althea Dixon, our senior enlisted medic, whose presence reminds us that 2009 is the Army's year of the non-commissioned officer (NCO), the backbone of our Army.

Ma'am, I am going to risk your ire and your gavel to speak with some passion and some clarity about how we in Army Medicine feel we are doing with the electronic health record and AHLTA.

The Army clearly recognizes the value of a fully implemented longitudinal electronic medical records system. Implementing an electronic health record (EHR), as it is known, of this magnitude and scope for our dynamic population that was well described by Congressmen Miller and Wilson is an enormous undertaking, and I acknowledge this significant challenge to the Health Affairs and to the entire military medical community as well as to our VA colleagues. An EHR is a critical enabler of an evidence-based system and outcome-focused health care system. To meet today's and future challenges our health care system will increasingly rely on a knowledge network, which includes personal health and clinical information along with analytic tools.

I think of it frankly as a knowledge centric warfare against disease and injury in a healing environment. We are doing in the healing environment what the warfighter is doing to fight and wage war, using information to aggregate into knowledge.

In addition to greatly enhancing day-to-day care, an EHR that contains the clinical records of millions of patient encounters over many years affords our medical researchers a potential source for clinical information that is unmatched in the civilian world. Since these records to a large extent come from a controlled military population, this strategic resource holds the promise of yet unknown improvements in health, in optimal outcomes of health care efforts, and even research breakthroughs.

This strategic resource could also potentially give us a huge strategic advantage in planning for force health protection. I recall that very clever TV ad where the refrigerator repairman comes to the door, not because the suburban housewife or husband has called the repairman, because the refrigerator has called the repairman. This is really the power of real-time health surveillance through a comprehensive longitudinal and globally deployed electronic health record.

Accordingly, and notwithstanding the shortcomings of AHLTA, we in Army Medicine have aggressively pursued research and development of tools that enable our researchers to mine our clinical data repository and our claims database in the civilian network to increase our understanding of our patient population, our current and our past treatment regimens, the clinical value and the safety of therapeutic medications and technologies and procedures, and our vulnerabilities to current and future hostile bio warfare attacks.

One such program was initiated by Colonel Trinka Koster as a small business innovative research program. And it is called the Army Medical Department's Pharmacovigilance Center. With it Colonel Koster was able to monitor adverse drug reactions on thousands, if not millions of doses of drugs prescribed to our patients and assist the Food and Drug Administration (FDA) in emerging knowledge about post-marketing safety of drugs we use. In fact our database enabled the FDA to get information that they themselves could not obtain from physicians and others and pharmacies who are dispensing these drugs.

Another example of what we have done to leverage information technology in our EHR is the creation of what we call the Joint Theater Trauma System, the JTTS. It is built in part on a joint theater trauma registry that is coordinated by the Institute of Surgical Research of the United States Army Medical Research and Materiel Command. It provides a systematic approach to coordinate trauma care to minimize morbidity and mortality for theater injuries. JTTS integrates processes to record trauma data at every level of care which are then analyzed to improve the care for each casualty at every step in evacuation.

We conduct research and development related to trauma care, we track and analyze data to determine the long-term effects of treatment that we have given. As an illustration of this, we have been tracking body temperature of casualties from the point of injury on the battlefield through the evacuation system and know that body

temperature is a major determinant of survival, basically hearts don't work, brains don't work, blood doesn't clot, cells don't fight infection. And so we begin to monitor body temperature and manage it closely and as a result of this are soon seeing improvements in survival and optimal recovery. These are just a few examples that we are using to begin to exploit this data repository.

The JTTS has been instrumental in helping the joint and coalition military medical team achieve the lowest case fatality rates from combat wounds in our history.

I also believe that an effective and usable electronic health record will contribute immeasurably to reducing the cost of the federal health care and sustaining a generous health care benefit for soldiers and their families. It is with this hope and promise that the Army Medical Department energetically assumed the lead for the DOD and was an earlier adopter of AHLTA.

Unfortunately, AHLTA has not achieved its full vision yet. The services are still not effectively able to seamlessly access complete data, patient data from the battlefield between military treatment facilities (MTF) and between departments; that is, the Department of Defense and the Veterans Administration. In my opinion, the failures of AHLTA can be attributed to the overall lack of a clear actionable strategy and poor execution from its genesis.

As a result of the Military Health System's (MHS's) lack of an IM/IT strategy, an information management/information technology strategy up to this point the Army Medical Department has been largely frustrated by a number of obstacles that continue to impede the system's capabilities and functionality. Bottom line, AHLTA has simply not kept pace with the expectation at the user level nor at my corporate level.

Our providers have been less than satisfied with its performance, its reliability, and its usability. As a result of our providers' discontent, we the Army have taken significant steps to improve usability of AHLTA and provider satisfaction. After many years of working closely with Health Affairs on the precursor to AHLTA, CHCS1, and being the first service to vigorously support the fielding of AHLTA five years ago, we faced a near mutiny of our health care providers, our doctors, our nurse practitioners, physician assistants (PAs) and others last summer.

A good example is Dr. Sarah Pastor. She is the Chief of Family and Community Medicine at Brooke Army Medical Center in San Antonio, Texas. Last year Dr. Pastor, who has really worked tirelessly to try to improve patient safety concerns that have been spawned by duplicate patient records in AHLTA, was brought to us and gave a presentation and she is a self-described super user of the system. I asked her, you are a super user, proposed by your general as the best user in the entire region, if not among the whole Army Medical Department, are you also a super fan. She said no, I am not.

So I said when our best and most faithful users of AHLTA could not admit to be fans of the system, I knew we were really in serious problems.

So to address identified shortcomings with AHLTA at the provider level the Army Medical Department recently invested significantly in a medical command, an Army medical command what we

call MEDCOM AHLTA Provider Satisfaction initiative, we call MAPS. This includes investment in tools like Dragon Naturally Speaking, Medical Speak, As-U-Type, individualized training and business process re-engineering that is led by clinical champions and it uses wireless and desktop virtualization. MAPS is beginning to show significant improvements in provider usability and in satisfaction, and our direct interviews with our providers and staff reveal MAPS implementation has generated a dramatic change in the attitude among our staff.

I can't stress enough how critical it is that we have an accurate and comprehensive longitudinal electronic health record that is accessible at every point of care. This really is our fusion of intelligence from the battlefield, all the way to home station and into the VA for rehabilitation and long-term care. To reach this end state, I believe that Health Affairs should develop a comprehensive, jointly designed, overarching actionable IM/IT strategy that has explicit prioritization.

Military Health System information technology investments and solutions should be transparent to the services sitting here at this table, and they should be jointly governed, meaning that we with service input are treated as principal customer and clients of the system and that we are heard and we are acted upon promptly. To achieve this, services should have greater voting representation on the Military Health System IM/IT decisions to better reflect the voice of the services as a customer. Because we are the ones who will ultimately have to deliver care and we are accountable for the care and for the outcomes of our clinical encounters.

I am cautiously optimistic that the direction that has recently been taken by our Assistant Secretary for Defense for Health Affairs, Dr. Casscells, and by the IM/IT leadership in Health Affairs is going to move us in that direction. I am cautiously optimistic.

In closing, I want to thank the committee for its interest and support in ensuring that our great soldiers and families receive the best possible care by leveraging all the available information technologies. As you can hear from my talk this morning, I am really passionate about our journey toward a personalized medical care system and the role of the electronic health record that is going to play in our ability to predict and prevent and preempt disease.

With your help, I am confident that we can achieve a global electronic health record that enhances the continuity of the care and surveillance and truly empowers our providers to deliver the best evidence-based practices in the world, but one that is also a mentor that helps with clinical decision making and generates knowledge in real time.

The Army Medical Department recognizes the remarkable benefits of a global electronic health record and remains fully committed to partnering with Health Affairs to collaboratively define a coherent way ahead for its electronic health record.

Thank you, ma'am. I look forward to your questions.

[The prepared statement of General Schoomaker can be found in the Appendix on page 52.]

Mrs. DAVIS. Thank you, General. We obviously let you go over, and we appreciate your frankness and look forward to the questions.

Admiral Cullison.

STATEMENT OF REAR ADM. THOMAS R. CULLISON

Admiral CULLISON. Chairwoman Davis, Vice Chairman McIntyre, Ranking Members Wilson and Miller, distinguished members of the committee, thank you for the opportunity to testify before you today. With me is Captain Bob Marshall, who is a family practitioner in the Navy, who is one of our best experts on electronic medical records in general.

Sailors and Marines and their families deserve the best health care in the world. Normal Navy and Marine Corps operations require constant global access to current patient data for appropriate clinical decisions at sea, ashore while overseas and in the military treatment facilities that border our bases and stations both at home and abroad.

AHLTA provides worldwide outpatient record in all fixed military treatment facilities. Unlike the decentralized architecture of DOD's previous electronic medical records, the composite health care system, or CHCS, AHLTA is designed around the clinical data repository, a single worldwide accessible database. This system requires software installed on thousands of personal computers to interact via unique networks across the global information grid. We have experienced regular performance and reliability challenges.

Our goal is to increase the time our clinical staff spends with their patient, not entering data into a computer. The current application design, functional mapping and work flow present limitations to make this difficult. Navy Medicine's clinical champions have created processes and methods passed on to others very similar to those that the Army has developed to facilitate patient care and recordkeeping. Over 200 of these recommendations were incorporated into the most recent version of AHLTA, AHLTA 3.3. Numerous hardware and software problems identified during the AHLTA 3.3 beta test at Naval Medical Center Portsmouth have mostly been overcome. This version is currently being installed across Navy Medicine and early user reports are generally favorable when compared to prior versions.

In preparation for this hearing, I discussed AHLTA with many Navy Medicine physicians and nurse practitioners. On a positive side there is unanimous support for the immediate availability of medical information that AHLTA provides. Hardly anyone desired a return to paper records. That being said, our providers remained largely dissatisfied. Amongst their top concerns their system stability, the amount of time required to record clinical encounters, simultaneous use of multiple programs in most patient visits, and clumsy syntax of structured text notes.

Military providers thrive on providing the best care for our patients. AHLTA instability makes this difficult and frustrating. Almost all of the providers I spoke to relate to the system going down unexpectedly recently at least once a week. Fail over mode, which provides access to the most recent visits in the local hospital has helped, but the transition requires several minutes. This can seem like a lifetime when it occurs in the middle of an early morning visit, delaying not only the patient being cared for but the entire day's schedule.

Navy Medicine has piloted AHLTA enhancements as well; for example, one example is wireless mobile tablets at Navy Hospital Jacksonville, which has been a great success for both providers and patients. One of the simple yet extremely important factors is allowing providers to face their patients rather than type with their backs turned. We are currently in the process of meeting technical requirements to provide wireless capability in our other medical centers and hospitals.

We support military health service plans to improve military health IT infrastructure. With appropriate oversight and execution, a services-oriented architecture approach should create system stability and reliability. These modernization efforts will also make it possible to quickly integrate user friendly capabilities and reduce our reliance on outdated components, which are difficult and expensive to maintain.

Our long-term goals must include solutions that acknowledge each service's mission requirements. Navy Medicine must be able to maintain and share medical information between our operational forces and fixed medical facilities. Our units routinely visit many different ports and medical facilities during each deployment. We need immediate bi-directional access to electronic medical information between shore-based hospitals, ships at sea, and marine units in the field in all theaters throughout the world.

Distinguished members of the committee, thank you again for the opportunity to testify before you today. I am convinced that the improvements in our electronic medical records will have a positive impact on the health of our active duty and retired sailors, Marines, and their families. Thank you very much, and I look forward to your questions.

[The prepared statement of Admiral Cullison can be found in the Appendix on page 59.]

Mrs. DAVIS. Thank you, Admiral. General Green.

STATEMENT OF MAJ. GEN. CHARLES B. GREEN

General GREEN. Chairwoman Davis, Vice Chairman McIntyre, Representative Wilson, Representative Miller, and esteemed members of the committee, it is my honor and privilege to be here to speak with you about the Air Force Medical Service. I bring with me Dr. Chuck Kowalewski, trauma critical care specialist and Critical Care Air Transport (CCAT) team leader. The Air Force Medical Service is on the cutting edge of preventive and restorative care and protecting the health and well-being of our military forces worldwide. Nowhere is this more evident than in the field of information technology, which is a critical component of our mission's success. I am honored to help lead the Air Force team of dedicated professionals in joint efforts with Office of the Secretary of Defense (OSD) Health Affairs, our sister services, and the Department of Veterans Affairs to address the IT issues confronting us today.

Our primary criticisms of AHLTA relate to speed, reliability, a very difficult user interface and a lack of functionality. The in-progress upgrade of AHLTA provides much needed provider request and functionality, but a shared standard network environment is critical to reliable operations and compliance with security requirements. We need a common interface that will improve the

experience and enhance the delivery of care. We support the evolution from outdated client server technology to the development of a service-oriented architecture. A combination of the enterprise service bus, and regional databases will greatly enhance the provision of care to beneficiaries. These plan changes we believe support the interoperability between different applications and will provide vital information to health care workers regardless of where care is provided by DOD, VA or the private sector, and MHS planned updates to the AHLTA architecture will improve the reliability, speed, provider satisfaction and patient health care experience.

In closing, Madam Chairwoman, I am intensely proud of the daily accomplishments of the men and women of the United States Air Force Medical Service. We thank you for your continued support and look forward to working together to improve the health of soldiers, sailors, airmen, Marines, and their families and all Americans. We stand ready for questions.

[The prepared statement of General Green can be found in the Appendix on page 67.]

Mrs. DAVIS. Thank you all very much. Gentlemen, I know while listening to your testimony it is not always quite as clear as to the actual participation that the services have had in trying to move through this, and I think one of the frustrations has been that we keep hearing that there is a fix on the way and yet it doesn't quite get done.

So could you go into some more detail? I think, General Schoomaker, you certainly began to do this in terms of what your actual participation in the governance of the Military Health System's IT strategy is. How do you see that and in fact where have you—if you could talk a little bit more about where that participation perhaps has not been as active as you might have liked it to be.

General SCHOOMAKER. Yes, ma'am, I am going to start real quickly and just answer a question but then turn it over to Dr. Pak if I might because he really represents our interest on this.

As I see it, I think there is a fundamental breach in the need to go into a project of this scope, this magnitude, this expense with a very clearly articulated strategy, not a tactically oriented wires and waves approach, but a true strategy that includes the formation of a campaign plan with lines of approach that are going to get us to where we want to go. I don't see that this has ever been developed or fully articulated. In fact, several years ago, quite surprisingly to us, it was articulated we did not have a strategy, and we look forward to seeing that emerge. We are hearing that again today from the leadership of IM/IT within the MHS that we need and they are formulating a strategy.

Quite frankly, ma'am, I think this frustrates many of us at our level who have been looking for that strategy for some time to include one that allows us as services to have a powerful voice as customers and clients to this process in formulating and then being held to the execution of that strategy.

With your indulgence, I will ask Dr. Pak if he has anything else that he wants to add.

Colonel PAK. First of all, I just want to on behalf of the Army medical providers that have really taken the brunt of the electronic

health record adoption, let me just thank them first, because they really have been wonderful citizens and wonderful professionals in this area of very challenging times with the war and all. They deserve much better. I offer you no excuses, but I think going back to the question, there is a governance process, services do clearly participate in the governance processes. It is changing. There is some good things happening now with the governance process changes that is being proposed.

But I think naturally of the size of the organization we are, I believe that this is between the customer, the provider, and the patient and where the decisions are being made strategically about IM/IT systems. The longer that is, the harder it is to meet the customer's needs. I think that is just a natural order of the magnitude of the size.

Therefore, I think the services, who really are responsible, as General Schoomaker said, for the care of our patients and our beneficiaries, I think we have to have greater representation. And that is not just serving and sitting on a governing board, it is really about a more active participation, and I am very confident that Dr. Casscells and the Medical Information Technology (MIT) leadership of the Health Affairs is wanting to do that and there is some proposed access to do that.

Mrs. DAVIS. I would certainly like to hear from rest of you in perhaps addressing what really is inhibiting that now. The problem has been recognized, it has been a long time in coming, and yet there seems to be some inhibitions for that voice being heard.

Admiral.

Admiral CULLISON. I would agree with Dr. Pak that there has been recent movement in a positive way in oversight. The Deputy Surgeons General and Mr. Campbell meet as a committee which discuss the IT portfolio for all of the Military Health System. The underlying issue with AHLTA is its basic structure and all the things that General Schoomaker talked about, that I talked about utilizing wireless programs, voice recognition software, having our clinical experts use the system as best we can to take care of patients is really a partial solution to a system that needs to be basically changed.

I think that you will hear in the next panel about their plan to go to a services-oriented architecture that will probably let us do that.

In spite of the things that we hear from our providers, our specialists particularly, who do not feel that the system is designed for specialty care. Examples of that are the ophthalmologists and orthopedic surgeons, for example, like to draw in their notes. We can do this in AHLTA, but it is more difficult. We have issues in other specialties about the structure of a note which may be more aimed toward primary care than the way that certain specialists think. These we really can't overcome until we are able to customize the clinical notes for specialists which again with services-oriented architecture should be something that is easier to overcome.

So I truly do see compared to the last many years an inability to overcome these hurdles. I believe that the way forward is positive. I know you have heard that before, I suppose you are hearing it again, but I have been a skeptic on many programs for many

years and I am starting to become a believer that we are about to get there.

Mrs. DAVIS. Thank you, my time is up. General Green, I just want to give you a quick second, a moment to respond. Did you want to add anything?

General GREEN. The one thing I would add is that I believe for probably four to six years we have been clinging to an older technology, the client server technology, in part due to contracts in place and hopes for fixes in the technology world. As we have kind of shifted towards more of a Web-based focus, I think we will see greater interface and greater progress.

One of the things that has been done in the reorganization is to put the assistant secretaries in each of the functional areas in charge of overseeing the IT requirements, and I believe that that is going to help. In combination with the Surgeon General (SG) input we are moving to newer technologies.

Mrs. DAVIS. Thank you. Mr. McIntyre.

Mr. MCINTYRE. Thank you, Madam Chairwoman. I wanted to ask in particular on page seven, as I was looking through your comments, Rear Admiral Cullison, you say near the bottom that data sharing with our TRICARE network partners remains a difficult challenge. And then you talk about various things the Navy has done and you will continue to work with this with the nationwide health information network in the civilian industry.

What is it that is the greatest challenge from a technical point and from a policy point so that we can better understand what we can do to help get on with this?

Admiral CULLISON. Data sharing with our TRICARE partners largely is due to a lack of a national electronic medical record. What we really need is a single standard electronic medical record for the country, and I know that is being discussed in many forums. When that comes that will be a great boon to all of us.

Medicine across the country is largely a cottage industry and many of our specialists that we refer people to in the TRICARE network do not have an electronic medical network in their system and certainly not compatible to ours in most cases. So consult results are either faxed or e-mailed with PDF files back to us, which need to be downloaded into our system, which makes it difficult to retrieve. That is what I was referring to mainly with the difficulty of communicating with our TRICARE partners. Again, that won't really be solved until we have a system in the medical world similar to what the banking industry has where you can put your Automatic Teller Machine (ATM) card in anywhere and get the information out.

Mr. MCINTYRE. Do you see some policy that we can adopt or promote on your behalf or on behalf of the Department of Defense that could expedite this in terms of the other partners you have to deal with or the other stakeholders?

Admiral CULLISON. Sir, my personal opinion, the best way forward for that would be to drive for a national electronic medical record based on a common standard that all medical facilities in the country adopt. I think only until we get to that will we be truly interactive throughout the country.

Mr. MCINTYRE. Thank you, Madam Chairwoman.

Mrs. DAVIS. Thank you. Mr. Wilson.

Mr. WILSON. Thank you all. Again, I am so grateful to military medicine. Military medicine led the way 30 years ago for electronic recordkeeping, but I share the same concerns that you keep hearing and that you all have expressed. And I appreciate you being candid and that is a unified system, a uniform system, a seamless system, a nonrepetitive, nonduplicative, where it was identified a physician had multiple records on a single patient.

I truly am interested in what is being done for and, Admiral, I was real impressed, too, by the other indications of use of technology. There is so much positive that is being done, but just as a nonmedical personnel I just really am hopeful that there will be a unified system and I am glad you identified not just the military but nationally that could be very helpful, first of all, for patients, but then for the medical providers themselves. I would be so concerned if there were multiple records within a system that people truly can make mistakes in terms of prescriptions or whatever.

So back again to the question, when can there be a unified system from DOD into the VA system and what steps are being taken to accomplish that? And I ask all of you individually.

General SCHOOMAKER. Well, sir, I will lead off. The VA system has an electronic health record as well, known as VISTA, we have AHLTA. Both systems are based on older legacy technology. I am not a wirehead, sir, I am just told this stuff. Both systems need major overhauls. Neither system is adaptable to the other's entirely, and I think we are at a point now where we realize what we need to do is two departments, and I think both department secretaries have taken a lead on this, is to build the so-called service-oriented architecture where you work in a Web-enabled environment on common programs that both departments require, but you can both access information sort of from in the middle.

We already have bi-directional flow of information from one system to the other. It is probably most prominent at the four VA polytrauma centers, so that if you are a patient at Walter Reed or National Naval Medical Center, Bethesda or down in San Diego and are sent to one of the four polytrauma centers at Tampa, Richmond, Minneapolis or Palo Alto, that information is exchanged and brought back in.

I am with all my colleagues in saying that one of our big problems is our civilian network. I will just say anecdotally, sir, when I was a hospital commander at Ft. Carson 15 years ago, and we started off the TRICARE program in that region, it bothered me that I was held to standards of quality and access, whereas outside the gate I was also held to standards of timeliness of paying the bill. Now that got us to transform our bill paying in the DOD system of TRICARE to being one of the Nation's leaders in timeliness of Web-enabled, almost instantaneous approval and paying of bills to physicians' offices, but we didn't force a transformation of electronic record that went along with the bill being paid. All we did was ensure that the bill got paid to those that we consulted or sent our patients to, but not that we had timely clinical information brought back into the hospitals that referred it. Terribly frustrating.

Admiral CULLISON. To the duplicate records, I will defer to the experts here, but our personnel systems and our medical systems need to merge electronically to overcome that issue. And I would refer to Dr. Pak or Dr. Captain Marshall to go more in-depth in that.

Again it comes back to the basic structure of the system that needs to be changed. Again you are going to hear service-oriented architecture again and again and again, and we believe that will provide us a backbone to which we can attach many systems, as long as the interface allows that we can attach almost any electronic system on to that and use it within our system.

BHIE, the Bidirectional Health Transmission Exchange of data from the military to the VA, is available in other centers besides the trauma centers but not perhaps totally nationwide.

One thing I would put forward is, as you well know, the VA Hospital in north Chicago and the Navy hospital at Great Lakes are merging, and that has been an interesting exercise on lots of fronts. One of the things that that does is really give us a lab in which we can figure out how to do immediate transmission of data between the two systems. I think we will probably not get to a common system there, but we will have coexistence of the two systems which needs to interact day to day, which will be our reality for the near future, and hopefully in north Chicago we can help take that forward.

Mr. WILSON. A similar system is being developed in Charleston, South Carolina, too.

General GREEN. From our standpoint there has been significant progress in terms of VA and DOD sharing. The data dictionaries that have been developed are allowing us to create interpreters to bring data together in central repositories. The difficulty has become that the VA uses regional databases and we pretty much rely on a central database. They have much more robust and less down time on their systems because of the regional base.

I think when we look at our transient populations going solely to a regional based system will not serve us well. We have to have that central data repository so we can pull from it anywhere in the world. The difficulty is when you use the client server technology which AHLTA has been based upon you really are reliant upon a system that has to have 100 percent connectivity 100 percent of the time and you can't quite get there.

Clearly VISTA has a better user interface. When you talk with a VA employee or a physician on the VA side, they are much happier with their interface. On the other side our structure data input has given us much greater computability and much greater abilities in terms of surveillance in our ability to pull out and do some knowledge development. We currently have 4 years worth of data, 25 terabytes from multiple databases. It gives us incredible ability at Population (Pop) Health Portal to look at such things as heat as indicators and trends in terms of disease, even real-time identifying new diseases as they arise.

And so I think there are advantages to both systems. And in some manner we need to merge their IT user interface with our data capability. How we do that is something we are working very vigorously.

Mr. WILSON. I look forward to working with you and my colleagues for a unified system. Thank you very much.

Mrs. DAVIS. Yes, Mr. Miller.

Mr. MILLER. Thank you, ma'am. Simple question to each of you, do your folks spend more time working with or working around AHLTA?

General SCHOOMAKER. Sir, I would have to say candidly that at the provider level, that is the level of the doctor and nurse practitioner, PA, others that are spending as much working time around the system as they do with the system. It is very highly dependent upon the practice. As Admiral Cullison alluded to in the primary care private sector, which maybe lends itself more to the templated standardized lexicon that we use, I have had a lot of very positive things. But in highly specialized, subspecialized medical practices where you have special diagrams and icons like ophthalmology and others, it doesn't.

At the corporate level, and I come back to this as important, at the corporate level our ability to roll up information has allowed us to do some things that we could never do before. It is not at the level we would like. Frankly, we leverage what the Air Force has done somewhat independent of Health Affairs to get information about population health, which is extraordinarily powerful. So at the corporate level I would say we are still doing work-arounds. At the provider level there are too many work-arounds.

Admiral CULLISON. Sir, I would answer that nonfacetiously in saying it depends. Most of our providers say that they have to stay later in the afternoon to finish notes because it slows down clinic time. To hear that people are staying an hour or so after work or longer to finish up a day's notes is not unheard of.

It depends in terms of how much effort one wants to put into designing one's own templates for clinic and so on. There are super users such as Captain Marshall who are very fast with AHLTA. It doesn't slow him down hardly at all. However, they put a lot of time into customizing the system to fit their practice. Not everyone, quite frankly, is willing to do that.

Again, I would reiterate that one thing I heard over and over was the fact that we do have information available to us on a worldwide basis with at least four years of data in there right now is not something our providers want to see go away.

They do not want to go back to a paper record. They want us to fix the one we have got with worldwide capacity. And to go back to what General Green was saying about regional versus worldwide capacity, if you look at where all of our services are and you look at the frequency of moves of all of our service members in all three services, we are all over the place. So to have a regional health record that would require us several times a day to go fetch information in a slow time frame from another data source would not be helpful.

General GREEN. I am going to answer this in an interesting way, two parts, first part my own, in my talks with our specialists and our primary care physicians. In essence if you talk with a primary care physician I would say it is probably 60/40. In other words, they are spending 60 percent of time with the patient and about 40 percent working with AHLTA. So it depends on how fast they

are with the program. With our specialists, they truly are working around the system, trying to find new solutions. Since we brought specialists with us, I would like you to hear from providers who use the system.

Colonel KOWALEWSKI. I am also speaking for many of my colleagues who I also respect and who have worked so hard with AHLTA and stuck with it. I think what I can add most of all, we need to maintain diversity in the user interface. It will be important that we have the images and the method that we can get them in and out. As you know, with some security issues that can be a limitation.

Not only do we want there to be able to have transcription available, but digital available to the Dragon Speak software. In terms of the database parsing that data is a good idea. The templates that we have work but they only work when you have templated patients, and not many patients consider themselves templated nor do I. So there is a lot of variability that goes on in a single clinic user interface that has to be accounted for in the software.

Mr. MILLER. If I can follow up with you, sir, since you are a user, recent visit to Eglin Air Force Base, and I learned that it appears that when our wounded soldiers are evac'd out of Germany back home that there is a problem, and this may be for the next panel as well, with our infrastructure to be able to accept the load of information that is being transferred back bandwidth, and my question is are we putting our soldiers, sailors and airmen at risk without sufficient IT capacity?

Colonel KOWALEWSKI. To some degree I can speak for myself because I fly a lot of patients in and out of theater. I have not had that experience. Generally the radiologic images, for example, are available when I get to Germany with my patient. One of the things that I happened to be working on last night was using AHLTA portably through Theater Medical Information Programs (TMIPs) and some of the other software. We have the transmitting data to actually while I'm on the plane be able to document on the plane and then be able to get that into the system so it is transmitted quickly. We don't have that live yet. We are working on that now.

The data when it gets home to the United States, yes, there have been some delays in that, and I have seen that at my base in San Antonio where I don't see it right away. And I am not sure that can say for technical reasons on why that is the case. I defer that to someone who will.

Mr. MILLER. Thank you, Madam Chair.

General GREEN. If I could add for one second. I was just at Landstuhl on Friday talking with them about some of the delays and it is a matter of data they didn't have before that they couldn't get that now they are able to get, but because of the way the database is sharing information, particularly imaging information, some of that takes as long as three to five hours to get to them. And so I think that is what you are referring to and it is something that we just recently had a visit out to Landstuhl to try and find solution sets to try and decrease that time frame. It has to do with how we are querying that.

Now I have to point out that probably just three to four years ago they would not have had any of that data. So it is actually a very nice improvement.

Mrs. DAVIS. Thank you.

Dr. Snyder.

Dr. SNYDER. Thank you. I just have a couple of questions and they are very basic questions. I appreciate all your candor, both today and in the past, of the challenges in the systems. I don't understand the cause of the challenges in the system.

General Schoomaker, in your statement you talk say there is no existing commercial system or federal system that currently can immediately meet the needs of DOD given its global and mobile population. Well, I don't know a population these days that is not global and mobile. I don't know of a big corporation that is not global and mobile. My wife considers me mobile, as she is home right now with four little boys under the age of three and we are a thousand miles apart. And yet I can use the same bank, the same bank card works. Wherever I travel in the world it works. We can go around the world and I can use a debit card almost everywhere in the world.

So I don't—I understand that DOD, you have a mobile and global population. I don't think that is the core of the problem. Why can I go out here and walk down the street to a Bank of America machine and have my whole financial—not a machine, but any computer in town and have my entire financial record that I ran up in Arkansas right before me, including drawings, by the way, which is what I call my signature on the back.

I don't think that global and mobile is the cause. What is the underlying problem?

General SCHOOMAKER. Sir, I am not sure that I am the one that you should ask that question. That is for the next panel.

Dr. SNYDER. Let me put it another way. If you had 10 DOD institutions just around the perimeter of Washington, you would be having the same problems. It is not the fact that they are overseas, is it, or that people move around or come in and out? There is something inherently different. Because other businesses deal with the global-mobile aspect of it.

General SCHOOMAKER. Sir, I think that your question is a very good one. It is one that we ask all the time. Because we are aware of other systems that are nonmedical that allow us to do that.

All I can tell you is, first of all, I feel compelled to say—and I think all of us are feeling this a little bit—we need to be careful, not pile onto a system that is giving us capabilities that we, frankly, never had before.

Former Secretary of Defense for Health Affairs, Assistant Secretary Sue Bailey, once said about our rollout of TRICARE, when people started throwing stones at this primary-care-based, managed-care system we were standing up, when did we ever become nostalgic for the old system of episodic care, where people didn't get care except in lines?

And I say the same thing about this. You have heard us all say that there are tremendous advantages of the system we have, though imperfect.

Frankly, duplicate records have always existed in the system. Sir, you are a physician. You know this. In our file systems of hard copies, we have duplicated records. The problem is, you become reliant on a single electronic record where you are told you can depend upon this, and you don't have people cleaning up the duplicate records as they do in our file room. That is an issue.

When we did a Joint Commission on Accreditation of Healthcare Organizations (JCAHO) survey in the Eisenhower Medical Center many years ago before this program came in, we estimated that 70 percent of the time in some clinics old records weren't available. Now we have records available 98 to 100 percent of the time.

Dr. SNYDER. I agree with you. I understand that.

I guess I will ask a different question.

It doesn't seem like the fact that you are a global entity or a mobile entity is the crux that is leading to the problem.

General SCHOOMAKER. I don't think it's the crux, sir——

Dr. SNYDER. And I hear the same complaints. Who was it—General Green talked about the specialties—maybe it was you, Admiral Cullison—talked about the lack of drawings. That is what I hear from dermatologists and all. But that is not a global-mobile problem. That is just the nature of health care.

My second question is, why is that such a hard problem to solve, do you think? I go back to my Bank of America thing. They can pop out the back of my check, and my name looks like modern art. Now, maybe I will do it the next time I write a check, is I will draw a little eyeball on there and put where the laceration was and how many sutures I put into the eyelid just to show that it is really easy to pop up. But why is that so hard in the electronic medical record?

Admiral CULLISON. Sir, if I can take a stab at this, the solution that we have chosen in the past is a single data repository where all military medical information is stored; and at the time that that was developed, that looked to be the best solution.

What we are afraid of is several things:

One is, we really don't have a backup for that, so if that system goes down, we are going to have a difficult time.

We also have, as General Green pointed out, a vast amount of data in that system. So you can't simply stop, turn that off, and go to a new system. We need to figure out some way to have data stored in multiple sites so we can immediately get at.

And the other issue that I would bring up is that our global and mobile is probably different than other practices in that I would state that—I can't give you a number, but a high percentage of anybody seen in any of our clinics is a mobile patient, whereas in other practices, that may not be the case, perhaps with the exception of an emergency room somewhere. So the fact that we do need it on a global and mobile basis, to use those terms, is our reality.

The point that I raise with ships, when we go on a routine deployment to the Pacific, routinely we will stop in Hawaii, be seen at Tripler Medical Center.

In the clinic of Pearl Harbor, we will go to and perhaps be seen in the Navy hospital there; perhaps in Okinawa, be seen there; stop in Singapore, be seen in a civilian hospital in Singapore; go to the gulf and stop most likely in Bahrain, be seen at the Navy

clinic in Bahrain, perhaps with records from the Bahraini defense hospital thrown in; and then stop in Australia on the way back; and then again in Hawaii.

So in seven months we will have been in all those hospitals for about five days and then be at sea the rest of the time. So that is our normal life in the Navy.

We can get there with a single data repository, but it needs to be connected to systems that will let us, within our own system, get at it anywhere in the world and have it be stable, which has been our big problem, creating a new interface so that it is easier to get into from a user standpoint. Once we can put other input systems onto it through a service-oriented architecture structure should make it immediately available.

I believe it was Chairman Davis asked, "Why can't we get there from here? What does it take?" We really need a nationwide medical record system that is electronic, with a standard standard, as the banking system has, to be able to truly interact throughout the world.

Mrs. DAVIS. Thank you.

Dr. Fleming is next, and I just want to remind all of us that we have a limited amount of time. We have a second panel coming in. So, to the extent that we can be as brief as possible, I know there is a great deal of detail in your answers, and I appreciate that.

Dr. Fleming.

Dr. FLEMING. Thank you, gentlemen.

Let me say, first of all, that I, myself, am a family physician. I was a Navy physician for six years, Naval Regional Medical Center, Guam, Camp Pendleton, Charleston; and I really enjoyed my time. And I remember well the handwritten charts that we carried around, none of which, by the way, I could read, which was very interesting, how I was able to practice medicine.

In my clinic, we implemented a medical records system that became paperless in the period of 1997 to 1999. And let me tell you, I feel your pain. In many ways, you are actually ahead of your civilian counterparts. But, as I understand it, this is a template-driven system. I think I heard the Colonel say that.

Colonel KOWALEWSKI. Actually, the database, as I understand it, is a tree-driven set of—sort of like check boxes, tree-driven. And since there are so many data points just because of the wide diversity in medicine, there are many templates available. Their graphic base has made it easier for the providers to work with.

Dr. FLEMING. The issue on that, of course, is that in order to break very complex information down and get it into a format that can be read you end up having to go through a number of these data points, clicking buttons, very time consuming. And when the information is going from where you are all the way to the central repository and back, you have bandwidth issues, you have all sorts of things that really slow that process down. It's very difficult.

Also, on the issue of interoperability, I don't foresee ever that we will all be on the same system, that is, civilian and military. What is most important is not what is happening as you design your chart note but that you can read somebody else's chart note, and that is really what interoperability is all about.

One of the things that I think is interesting, it sounds like the whole backbone in technology is the system needs to be updated. And you are Web based now, as I understand it, pretty much, or not? You are not Web based? It's not an Active Server Pages (ASP) format?

Captain MARSHALL. Sir, it is all client server right now. So it is client on, and then they talk back to the central data repository. It doesn't talk back to the central data repository (CDR) every time you put information in, but when you go from the subjective objective to the assessment plan, to the disposition, and to the signature things, at those points it writes back to the CDR.

Dr. FLEMING. Is it possible to just simply download the entire record, work on it completely, and then send it back up?

Captain MARSHALL. No, sir, it's not designed that way. And the reason why is because, for stability, to make sure that the data is automatically saved so that you don't lose that data in case the system goes down.

Dr. FLEMING. Right.

The other thing is, I think what is really coming online among the private systems that has become very popular with physicians who are responding quite well is the use of artificial intelligence. Is there any plans to use that?

Colonel PAK. Sir, there is no artificial intelligence per se.

One of the things we are working, within the Army, specifically, at TATRC, which is a telemedicine and advanced technology research center, is to look at leading technologies that can improve the human computer interface. Because if you look at large parts of their challenges, it really is about how do you practice that care, keep an eye on the patient, and spend that time and not away from the patient and document care? So looking at speech technology, plus the ability to take that language and turn it into computable text. So if I say, patient is a 36-year-old female with cervical cancer, all those terms, that age, becomes a computable text, along with other terminologies. Those are what we are working on with other universities that are leading this effort. So those are still in the research areas.

But I think that several of the questions, sir, including yours, really get at the lack of national standards in this area.

Recently, as you know, the Office of National Coordinator, Health and Human Services (HHS), has really led this effort called the National Health Information Network. That is really what is going to drive our national road to get that vision of what an electronic health record would do for our Nation. We believe, and we are actively working on federal participation and building an adapter so that when you hear about the system from the second panel, you will hear that our path actually converges to that. So as we build our coherent system, 60 percent of our beneficiaries, as you know, get taken care of on the outside. An ability to bring that information back and have an integrator approach is going to be critical as we move to the future, and that is what has got to be planned.

So Army is invested, Army leadership particularly sees that vision, and that, I believe, is really ultimately the way we need to go.

Dr. FLEMING. I think the ultimate point we need to be at—and I think this will help out a lot with the civilian-military interface—is that every American has a medical record that sits someplace on a server—I know yours are in Montgomery, I believe—but sits someplace. And every time a physician, with his system, is going to function with that, is going to somehow add or subtract something—or not subtract, but take information down—they bring at least a copy of that record or the part that has been authorized, they add to it or adjust, or whatever, and then send it back down. I think that would be a way that these two systems could work very well together.

Mrs. DAVIS. Thank you, Dr. Fleming.

I need to turn to Mr. Johnson so that we can move on.

Mr. JOHNSON. Thank you, Madam Chair; and, also, thank you all for the great service that you do for the Nation. The American people appreciate it; and I appreciate it, also.

This AHLTA operating system, how long has the military utilized this system? Does anybody know?

General SCHOOMAKER. Yes. It was initially tested at Fort Eustis, Virginia, about six years ago; then data tested at William Beaumont Army Medical Center in El Paso, Texas, Fort Bliss, shortly thereafter. And then we began the implementation in the southeast United States in 2003, 2004.

Mr. JOHNSON. And let me ask this. I understand this is an open-source program. Does that mean that it was developed by some institution in the private sector and it is available to the public at large, if you will?

Colonel PAK. Sir, if I could take that question. I think it would actually be best if I defer that question to the second panel. I think they really have the answers to that question.

But it is a mix of COTS and GOTS—meaning commercial off-the-shelf and government off-the-shelf. So some source codes are ours. We contract those codes to be developed. Others are commercial, proprietary. There is a mix of that currently.

But, again, the second panel would be better to answer that.

Mr. JOHNSON. Certainly. And, unfortunately, I have to leave before we hear from the second panel.

Does anybody know how much we pay for the system? How much it costs yearly? Whether or not the annual or periodic updates are only available through the vendor? And who is the vendor? What company is the vendor? Is it Oracle?

Captain MARSHALL. Sir, there is actually a mix of vendors. The primary vendor is—Northrop Grumman is the primary vendor for the AHLTA section. The data layer, which is the big data repository, is Oracle. The data dictionary, which is combining all the taxonomies, is actually a 3M product. This is actually a system of systems. So there are multiple systems.

Don't forget we have huge security requirements, so there are all these authentication products as well.

Mr. JOHNSON. Certainly. Is it possible that we can develop our own system in-house? Why is it that we would have more than one system instead of a combined system with a number of vendors, if you will?

Captain MARSHALL. Well, we don't have, resident within the DOD system, the programming expertise. Because it is a very complex system, and we have never built it. So we don't have the program expertise.

The other thing is, if you actually look at any of the commercial vendors, they are not a single system either. They actually are multiple systems. You may have like an Epic or something like that, which is a large commercial vendor, but they have multiple other pieces that fit in with that to do other things. So there is no single system in the world that actually is a single program even on the commercial side.

Mr. JOHNSON. So was there some kind of Request for Proposal (RFP) put out to determine which program the military would use? And, also, does the Coast Guard use this same system, also?

Captain MARSHALL. They did up until recently, but they are now starting to use AHLTA as well. They were choosing CHCS alone and another system, but now they are using AHLTA as well.

One of the things that you need to be aware of is our old Composite Health Care System (CHCS) is actually a regional system. So we actually have the same experience that the VA did with having a regionalized system.

And I am also a regular AHLTA user. Up until just recently, I used it every day. And so I can tell you that when I moved from place to place I could not see the patients that I saw at the last place. So it's a pretty significant upgrade in our system to be able to now, when I move from place to place or if I have patients who have been seen in Afghanistan or Iraq, I can see their notes. So it's a significant upgrade to what we used to have.

But, yes, the Coast Guard now does use AHLTA.

Mrs. DAVIS. Mr. Conaway.

Mr. CONAWAY. Thank you, Madam Chairman.

I have former clients and current friends in the medical profession in the private industry, and I don't have one of them that brags mightily about how well their current systems are working either, so the private sector hasn't got this solved either.

Just help me understand the scope of the issue. Can each of you give me the size of your provider forces and patients collectively that they see? Do you have that off the top of your head?

General SCHOOMAKER. We, in the Army, are a force of about 65,000 total; and of which probably one-third to one-quarter are providers and people working in hospitals and clinics.

Mr. CONAWAY. And how many patients would they be responsible for?

General SCHOOMAKER. We manage between 3 and 4 million patients.

Mr. CONAWAY. And the Navy?

Admiral CULLISON. Sir, we have, off the top of my head, 32,000, 33,000 on active duty, plus many contractors and civilians in our system. Again, about a quarter probably would be providers. I would have to get our patient numbers back to you.

Mr. CONAWAY. And your numbers would include the Marine Corps as well.

Admiral CULLISON. Yes, sir.

Mr. CONAWAY. In terms of patients.

[The information referred to can be found in the Appendix on page 99.]

Mr. CONAWAY. And Air Force.

General GREEN. We take care of roughly 1.2 million beneficiaries that are enrolled to us, plus, of course, any others that come into our facilities. Whereas, from an Air Force medical service standpoint, we're about 32,000 strong as well. And I would have to take for the record to find out the exact number of providers.

[The information referred to can be found in the Appendix on page 100.]

Mr. CONAWAY. But 32 is the number. I mean, all of those folks are obviously important to the care the patient receives, whether the filing clerk or the surgeon.

You mentioned the trouble with specialists who like to draw. That is not unique to the practice of medicine in the military. What has the private sector done to be able to capture that? Or do they have a solution?

Colonel PAK. Sir, I am a dermatologist, so I like to draw. I am more visually oriented. But I think the larger challenge, as you go out to the commercial sector, you will see derm-specific or AHLTA-specific applications that do wonderful things. And the reason that is the case is because the work flow within that specialty is set in a certain way. The variation is less within that specialty. When you start combining all the specialties, trying to meet all the specialists' needs, that is when you really start getting into very complex——

Mr. CONAWAY. But wouldn't a Health Maintenance Organization (HMO) or a large practice like that have the same issue in terms of their own system? I mean, no one can afford a single system for every one of these. They have got to come to some collective point on that.

Colonel PAK. Yes, sir. And the commercial sectors clearly have that challenge, and they have joint tools embedded in theirs to address some of that.

Mr. CONAWAY. I guess the question is, we don't have to reinvent the wheel——

Colonel PAK. No, sir.

Mr. CONAWAY [continuing]. In terms of these solutions.

You mentioned the overall move to a collective standard for electronic medical records so that, no matter where I went as an individual, my provider could get at that. What are your particular challenges? If the private sector did go to something like that, how nimble are your decision-making processes and your funding flows to allow you to adapt to something new like that?

Admiral CULLISON. Sir, the basic problem we have is that if we want to plug in any type of program, perhaps a drawing program, to insert that into our existing system would require a major rework of the entire program. The backbone you will hear about in the next panel, as long as certain code is written into any program, it would be able to be inserted into our system, and we would be able to remove something else fairly quickly. Right now, we can't do that without an overhaul of the entire system any time you want to make any change at all. That is our basic problem.

So all the things that Dr. Pak talked about, especially specific programs, even though they are wonderful and our providers would

like to have them, and even if all our specialists in the Army, Navy, and Air Force could agree on one dermatology program, for example, we would not be able to insert it into the AHLTA backbone without very expensive rework. So we have to accept the common denominator that very few are really happy with.

Mr. CONAWAY. Who breaks the tie? I mean, every physician that is a friend of mine has a unique way of practicing, and they want the software to adapt to them. Across the services, is there someone that listens to all three and says, all right, we understand that the Army orthopedic surgeon wants to do this and the Navy wants that and the Air Force guys want to do this. Where is the tiebreaker in that?

General SCHOOMAKER. Well, each of the services has to have a tiebreaker first; and for the Army that's me. And, frankly, it has taken us about five years. But what you are talking about, and Dr. Snyder said earlier, is that every one of our providers, in a sense, makes the perfect the enemy of the good and wants the ideal system, and frequently one from a friend who is using it outside the gate or in practice somewhere else or in the VA system.

So what we have tried to do is, first of all, break the tie within the Army. Are we going to have this standard? This is what we are going to work with and try to move forward. And then Health Affairs has the ultimate say about how the tie is going to be broken.

Mr. CONAWAY. One final comment. There was an article in yesterday's paper about the conflict going on between fit-for-duty decisions, whether it lies with—and that is not this conversation, but part of that article said that in some of those instances the individual military personnel have to hand carry their records around the system; and I hope that, ultimately, that would be fixed by the solutions that we are working on here.

Mrs. DAVIS. Mr. Murphy.

Mr. MURPHY. Thank you, Madam Chairwoman; and, to the panel, thank you so much for what you do for our warfighters and our veterans. We appreciate that.

I am Patrick Murphy from Pennsylvania. I actually used to be the hospital attorney at Keller Army Community Hospital. Dr. Pak, your alma mater up there at West Point. And I got that the VA system is Veterans Health Information Systems and Technology Architecture (VISTA), the DOD system is AHLTA, that it is not Web based. And there is clear consensus that we need to make sure that we have a service connect between Department of Defense and the Veterans Administration, and that it is synced up, which it's not right now, and it's not Web based. And these are all our goals.

I think we also need to understand that, also, though, when you look at private industry. And we need to bring HHS into the loop. You look at the fact that they got about $19 billion in stimulus money for Healthcare Information Technology (HIT). And we need to be working this together because you have been at the forefront. Even though it's not perfect and we need to figure out what's going on, you have been at the forefront as far as electronic medical records.

As we understand, there has been a lot of economic investment in the current health information technology systems in the De-

partment of Defense and the Veterans Administration. I think that a continued investment of just staying with the same system, practically, I think it would be potentially throwing away good money if you just stay with the current system, making it better and more bells and whistles.

I think, ultimately, it will be more cost-effective to develop a single electronic medical record foundation, the architecture, what you talked before about the service-connected architecture, that can serve both the Department of Defense and the Veterans Administration and allow a fully interoperable medical record throughout the lives of our servicemembers. I was with General Shinseki this morning, and I relayed those concerns to him.

With that in mind, I think this needs an update. AHLTA is a great opportunity for our country. We have a chance to create, from the ground up, the world standard in medical information technology and electronic medical records for both the public and the private sectors. So my questions to the panel are: What steps, if any, are you taking to ensure that any updated version of AHLTA within the Department of Defense will partner well with the private-sector information technology health systems?

Colonel PAK. Sir, I think back to the National Health Information Network. Because I think your statement about partnership with HHS is critical, because there is a national effort going on to ensure that we accelerate the adoption of the electronic health record and then connect it through a standards-based communication.

We clearly are taking steps now, building an adapter; and what you will hear in the second panel will allow that adapter to communicate with the rest of the United States so that, as the electronic health record adoption that goes from 7 percent today to hopefully 10, 15, and perhaps 50 percent in the next 10 years, we will be able to draw upon that and really lead the Nation through our pure size and our need for network providers on the outside.

So I believe that your statement about the National Health Information Network and our framework and what you will hear next about the SOA, or service-oriented architecture, really will allow us to be in that position and take a leadership role.

Mr. MURPHY. Dr. Pak, is it your opinion than that with this adapter technology, if we invest in that, is that the goal of the Department of Defense, that the next generation of medical information technology software will become, with this adapter, the nationwide standard that people can tap into?

Colonel PAK. Well, I would rather defer to Dr. Casscells and his leadership to talk specifically about that. But I believe that the Department of Defense has a permanent seat on the Office of National Coordinator on the National Health Information Network. We are currently finished with the pilot of the development of the adapter, and the Army is the lead for that development. So I believe we are actually participating in not only the adapter but setting the standards.

General SCHOOMAKER. But, Congressman, I just have to be candid in saying that, for the short term, our challenge right now is to make sure our providers stay on board with us. I mean, if they leave the system or abandon their use simply because it is not user

friendly, then it doesn't matter what our architectural changes for the VA are.

Similarly, I, as a corporate leader in Army Medicine, have to be able to demonstrate utility at the corporate level and improving in population health, improvement in evidence-based practices. So we are in a short-term kind of battle right now just to keep the gains that we have made over the last five years.

Mr. MURPHY. And, General Schoomaker, I am cognizant of the fact that the top three reasons why people leave their health care system, the Department of Defense or VA, is because of the electronic medical records. I understand it's cumbersome and it's not perfect, but I do think that there is a consensus within the American population and the Congress of the United States—and, frankly, now the White House—that electronic medical records is the most cost-effective and efficient way to provide health care. It is where we can really produce savings. And, frankly, the Department of Defense and the Veterans Administration are going to be at the forefront.

And, General, your brother is a Ranger. You know, Rangers lead the way. And I think that the DOD and the VA are going to have an incredible moment right now in our country's history with information technology.

And we are going to be working with you, as a Congress. I do think it's going to have to be with not just at Department of Defense and VA but with HHS. Because, frankly, they have the biggest budget when it comes to health IT; and we need to make sure that we rope them in in this process, get Secretary Gates on board, Secretary Shinseki on board, and the Governor on board.

So thank you very much for your continued service to our Nation, and I look forward to partnering with every single one of you.

Mrs. DAVIS. Thank you, Mr. Murphy.

We are going to move to the second panel. But can I just get a temperature from you on this. I mean, do you believe that you are going to be able to impact this process, referencing the questions that Mr. Murphy asked in terms of the role that DOD is going to play as we move to that next generation?

General GREEN. Madam Chair, if I could start, I think the answer is yes. I think we are already impacting the process.

Admiral CULLISON. I would agree with General Green.

As Congressman Murphy pointed out, we started doing electronic prescribing about 20 years ago, long before anybody else; and it has proven successful for us. We are in the middle of a transition right now. Our providers are frustrated with it. It is not the perfect system. But, again, they would not go back to a paper record for a trade of having information handy, and it's our job to make it more user friendly quickly so, as General Schoomaker points out, we can keep our staff on board. So, yes, I think we will get there. I really do.

General SCHOOMAKER. Yes, ma'am. I believe the same way.

I think that one of the reasons we keep coming back to those islands of excellence in this is to demonstrate the way ahead and to show that this has extraordinary promise and that, as the Congressman said, we can be at the forefront on behalf of the American people and the public for how this does.

As I said earlier, I am cautiously optimistic that, with the changes that Health Affairs has undertaken, we can move this ahead.

Mrs. DAVIS. Thank you very much. Thank you so much, all of you, for your service and your testimony here this morning.

We look forward to the next panel. And if you can move up as quickly as possible. We are not going to take a break, because we are really under a time crunch. We kind of let a lot of the five-minute rules pass because you all had some important things to share. Thank you, gentlemen.

For our second panel, we have all of the key IT players from Health Affairs TRICARE Management Activity.

First is the individual with overall responsibility for the program, the Assistant Secretary of Defense for Health Affairs, Dr. Ward Casscells. Next is the Chief Information Officer of the Military Health System, Mr. Charles Campbell; and the Military Health System architect, Mr. Tommy Morris. And finally, we have Colonel Claude Hines, the Program Manager for the Defense Health Information Management System; and Mr. Tim Harp, Acting Deputy Assistant Secretary of Defense for Command, Control, and Communications, Intelligence, Surveillance, Reconnaissance and Information Technology Acquisition.

Thank you so much for being here. We look forward to your testimony. Obviously, you were referenced on many occasions by the first panel; and we hope to really get the nuts and bolts from you as well. Thank you.

STATEMENTS OF HON. S. WARD CASSCELLS, M.D., ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS, U.S. DEPARTMENT OF DEFENSE; CHARLES CAMPBELL, CHIEF INFORMATION OFFICER, MILITARY HEALTH SYSTEM, U.S. DEPARTMENT OF DEFENSE; COL. CLAUDE HINES, JR., PROGRAM MANAGER, DEFENSE HEALTH INFORMATION MANAGEMENT SYSTEMS, U.S. DEPARTMENT OF DEFENSE; TOMMY J. MORRIS, ACTING DIRECTOR, OFFICE OF DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR FORCE HEALTH PROTECTION AND READINESS PROGRAMS, U.S. DEPARTMENT OF DEFENSE; AND TIMOTHY J. HARP, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR COMMAND, CONTROL, AND COMMUNICATIONS, INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE AND INFORMATION TECHNOLOGY ACQUISITION, U.S. DEPARTMENT OF DEFENSE

Mrs. DAVIS. Dr. Casscells.

STATEMENT OF HON. S. WARD CASSCELLS, M.D.

Dr. CASSCELLS. Chairwoman Davis, Chairman Smith, Ranking Member Wilson, Ranking Member Miller, and Dr. Snyder, thank you for having us here to talk about this vexing problem. Thanks for your interest in it, and thanks for the challenging questions from your staff who stay on top of us. Now, these hearings surface areas of miscommunication in our own shop, so they serve a very important purpose for us.

Thanks, also, for letting me bring the health IT team here. They all stayed at the Holiday Inn Express last night, and some of the technical questions I will have to refer to them.

Electronic medical records, as you know, ought, in principle, to foster better care, ought to have fewer lost records. The records ought to be legible. The system should provide reminders when you have overlooked something. And it should also help you identify trends. And it should help the system as a whole to make use of these trends to generate new knowledge and eventually to decrease costs.

But we have been challenged here. Some of the challenges you've heard about for years: legacy systems, Massachusetts General Hospital Utility Multi-Programming System (MUMPS)-based architecture, silos from different legacy systems, a high incidence of cyber attacks, so much so that we have had to ban, at least for now, the thumb drives that people find so helpful, the importance of operating in these very difficult environments, Afghanistan, ships that go from port to port, the importance of secret networks, for example, like Secret Internet Protocol Router (SIPR).

You know, we also have some self-inflicted wounds here. I think the committee is well aware that we have had, over the past decade, contracts that were poorly written from the standpoint of performance. They had loopholes in them that permitted delays. We have had, in some instances, lax oversight of some of these contracts. We have had almost automatic extensions, which is certainly not a good business practice. This has led to the late deliveries on software. AHLTA 3.3 was basically a year late rolling out. And that product, when it comes, is often hard to learn, hard to use, slow, and occasionally crashes.

I will say, when I came on board two years ago and began to hear the complaints about AHLTA, I took a hard look at it; and the first step was to ask our Inspector General and our other legal people to look at this. They did point out one reassuring fact; and that is that they feel the process, although maybe not always expert, was clean. There have been no bid protests in all of the AHLTA acquisition and TRICARE contracts over the past two years. So I am proud of that.

I also noticed that we had a lot of young people who had good ideas and passionate feelings about the system, and it seemed clear that what we ought to do is not listen so much to the corporate consultants, but to some of our own service members. The Army, Navy, Air Force and the Marine Corps had strong ideas about this. Now, some of them were not well informed, but some of them were brilliant, and we have learned to take advantage of this.

So, for example, you heard earlier about the Air Force Computerized Movement Planning and Status System (COMPASS), the Army's MAPS system. Army and Navy have been world leaders in telemedicine, for example. So we have learned to listen on our Web site and held Web town halls; and, just walking around, we solicit this kind of input.

We put together councils of colonels, put together a Red Team, which consists of industry representatives as well, people from Health and Human Services and the VA. We spend a lot of time with the VA. We are trying to coax our systems to converge, to

evolve towards each other in a convergent way. And I personally go to most of the AHIC meetings, the American Health Information Community, that HHS leads. So we have been very active in the national health information network.

It became very clear almost two years ago that we needed to adopt a kind of graphical user interface, a home page that was similar to VISTA, the VA system. And Chuck Campbell and his team have done that. In fact, the one they have developed is one that I think VISTA will adopt as well, because it's compatible with both systems. I can't promise that yet, but it is a system that has impressed all of the users in the pilot studies, so we are very proud of this graphical user interface.

Another thing we did which has been informative is we recruited Chuck Campbell to come back from the VA to the DOD, and our Chuck Hume went to VA. And Mike Kussman and I felt that this "Chuck swap" would help us cross-pollinate the two services. In fact, it certainly has; and it has improved our trust and our communication.

We insisted that we develop a personal health record. And with Google and Microsoft, we have given soldiers in Madigan Army Hospital a choice of how they want to keep their records as Web based and the same one that you all can use. Ours differs only in that AHLTA populates your Google or health vault record automatically for you, and this is a way that we can eventually be interoperable with the outside world. So many of our patients see private doctors downtown who don't use—only four percent of them have electronic health record systems. So these have been advances.

But the big advance is the one that is coming up. We will have, within about two weeks time, a blueprint which we will go over with your staff, I am sure, on a new way ahead, a unified strategy, a unified strategy with regional distribution.

What does that mean? This is a strategy that enables us to deal with the legacy systems. It provides a sort of translator which helps the legacy systems be upgraded in step-wise fashion, using modules. As I explained it to Secretary Gates, by talking about the open source aspects of this and the fact that we would have Web-based redundancy, that it would be a faster system, faster to deliver a new product and more stable, he said, I understand, it's like Legos, right? And it really is like Legos. That is the wisdom, I think, the simplicity of this unified strategy which we have developed. And when I say "we," I mean all the services and us.

Mrs. DAVIS. Dr. Casscells, if I could stop you. I am afraid we are going to run out of time because we are going to have to be out of the room. So is it possible to move to Mr. Campbell? I wasn't sure if you were speaking for the whole group, but I think, Mr. Campbell, just in terms of understanding what those pieces are there. If you want to conclude your remarks, and we will move ahead.

Dr. CASSCELLS. Chairwoman Davis, I am sorry. I think I can speak for the whole group, and we can proceed directly to your questions.

Let me just say, in finishing up, we brought all these young innovators together from the services and from our own shop. We

expect constant turmoil because we have people who are passionate and innovating. We will never have people completely satisfied with our system. That would be a mistake. It is going to be a continually growing system, and it needs some ferment.

As General Schoomaker said, we want to balance innovation with insurgency. We can't have insurgency. We eventually have to coalesce around a strategy.

I would also warn you that change is resisted by some of the big companies. What we are doing today, we will be opening things up for some of the smaller companies because they innovate quickly. There will be some pushback on this.

Finally, let me just say I want to be wary of overpromising. We have done that in the past. But I am excited about this. I think there is a chance here that we can once again be leaders for the Nation in electronic health records, as was the case several decades ago. I would like to think that a year or two from now you will agree with me that AHLTA has gone from intolerable to indispensable.

Thank you, Madam Chairwoman.

Mrs. DAVIS. Thank you, Dr. Casscells.

[The joint prepared statement of Dr. Casscells, Charles Campbell, Tommy J. Morris, and Col. Claude Hines, Jr., can be found in the Appendix on page 76.]

Mrs. DAVIS. Am I right to assume, then, that you were speaking for at least the four of you? And I wonder, is that right, Mr. Campbell? Or were you going to add to that?

Mr. CAMPBELL. Ma'am, we have previously prepared oral statements, but we can go with what Dr. Casscells had for sake of time.

Mrs. DAVIS. And Mr. Harp as well?

Mr. HARP. Yes, ma'am. I submitted my statement for the record and look forward to questions.

Mrs. DAVIS. Okay, great. Thank you.

[The prepared statement of Mr. Harp can be found in the Appendix on page 92.]

Mrs. DAVIS. What I would like to do is to ask you if you could give us some specific dates. What is the timeline here? Integrate that with where you expect to have completed certain tasks, and do that as well as you can since we have been looking at this for a long time.

And, also, can you incorporate into that basic costs as well? What are our responsibilities here?

Mr. MORRIS. Madam Chairwoman, Mr. Tommy Morris. To date, I took over the chief architect at the request of Dr. Casscells, Ms. Ellen Embry and Mr. Chuck Campbell; and we began an initiative to take a holistic look at our enterprise architecture or lack of enterprise architecture at the point. This initiative was actually started in October, and the groundwork was laid from August of 2008 up to that point, in which we developed a draft plan that we put out for staffing to begin the initiative.

Some of the components have already been done. The draft document went out for staffing to the services. This is our enterprise architecture strategy. And we received that document back to adjudicate the comments at the beginning of March. So we will send another draft out at that point, and we are willing to share that.

I heard comments in some of our earlier testimony that there is no plan. And I beg to differ, but there is a plan, and it has been staffed out, actually, to the services. The only nonconcur we got on that plan was actually from the Army.

Mrs. DAVIS. I'm sorry. Did you say that it hasn't been staffed out or it has been?

Mr. MORRIS. It has been staffed out, yes, ma'am.

Ten February we completed a prototype enterprise service bus. Enterprise service bus is basically Universal Serial Bus (USB) for our systems, both legacy and emerging, that allows the interoperability of those systems, as well as with the VA. And, again, that is a prototype that we have, and that was delivered on 10 February.

We also have delivered a prototype graphical user interface that will allow our providers to interact on a development process for the new user interface. This unified user interface actually has the ability to work over both AHLTA and VISTA with the newer type Web services capabilities or, as people mentioned earlier, service-oriented architecture approach.

Thirty-one May, we anticipate having the final framework for that graphical user interface so we can begin deploying over different systems and pilots to be able to rapidly do this. Rather than taking years to develop, we have actually developed some of these things in months. As Dr. Casscells had mentioned, the blueprint for this initiative will be delivered this month.

I am the architect of that blueprint. To date, there is a reason why we hadn't requested funding for any changes to the system; and part of that is that the current systems that we have, if we were to benchmark what our costs would be, it would be astronomical. Using the state of the technologies and the industry advisory panel and Red Teams we put together, they are actually reviewing the blueprints to allow us to develop an open-standard, open-architecture blueprint of which anybody can build to. And that is important.

Again, it's being delivered to the DOD, which will then go out to our line services, as well as our functional communities, for review to ensure what we are doing meets their needs, which is extremely important.

Some of the other things that we have done, if I could mention, we have actually started making changes based on the feedback from industry so we can implement industry best practices into our own processes. Historically, we haven't done that. We have been—not encumbered necessarily, but tied to the acquisition rules which weren't necessarily conducive to rapid development, rapid prototyping.

So some of the things that we did—and I will give you an example. In our contractors, typically what we do when we accept delivery of products from our vendors, we ask, did they deliver on time, on schedule, on budget? What we didn't do historically is we didn't add a couple of pieces on there which the industry does to themselves. For example, if Intel and Microsoft were to partner, they would look at certain things of each other before they partner. And this is, did they deliver a quality product that worked, and did it meet the user's needs?

Mrs. DAVIS. Could you tell us a little bit more about the Red Team, who sits on that?

Mr. MORRIS. Yes, ma'am.

There are three components to what we developed as a Red Team at the guidance of Mr. Campbell and others. The first part is an industry advisory panel. The industry advisory panel consists of—and I will try to get these all off the top of my head, or I will provide them at a later time.

Mrs. DAVIS. If you want, you can provide those for the record.

[The information referred to can be found in the Appendix on page 99.]

Mrs. DAVIS. But the key here is for us to get an understanding of how engaged it is, how often the team has met. Is that information really shared with the services?

Mr. MORRIS. Yes, ma'am. The services are actually part of the Red Team in the schedule.

So, to start with, this initiative historically would have taken about nine months to develop a blueprint; and that is based on industry best practices and the feedback that I have gotten from the industry partners. The industry partners that participate in the Red Team, for example, are Microsoft, Intel, Hewlett-Packard (HP), IBM, Oracle, SAIC, Northrop Grumman, General Electric (GE) Medical, Harris Corporation, New School, and others.

Now, the importance of selecting folks to participate—and this is open, so we can actually engage other partners based on the needs. But what we did is those organizations just went through a renaissance of implementing service-oriented architecture approach for their corporations. They did it to streamline profit for their businesses. We need to do it to streamline, to be able to deliver quality products and service to our user communities, if you would, our services. And we went to them and asked them if their senior-most engineers could participate as a consultant on our blueprint so as we move forward we can ensure that it's an open architecture, open standard.

So that is the level of participation. And we have now had three meetings—and, actually, we have another one coming up on the 26th of March, in two days—in which we actually bring forward parts of the blueprint, the graphical user interface, the standards of which we are building to, as well as implementing industry best practices in our acquisition and how we review things with our vendors.

Mrs. DAVIS. Thank you.

I am going to move on to Mr. Wilson, because he has to leave, and we will try and come back to that.

Mr. WILSON. Thank you all for being here today.

I am in the category with General Schoomaker, and that is that he depends on wireheads, and I am looking for a geek to try and explain these issues for me. Secretary Casscells, I wish you well trying to get all this straight.

But maybe Mr. Morris needs to—I think what you are describing, and that is a unified electronic health system, how close are we to establishing that? What will be the cost? What are the plans?

And then another issue related to AHLTA is, with it crashing or its inability to be used, how soon will that be corrected?

Mr. MORRIS. Sir, if I could, with the current state of technologies, we can actually—and we have actually began implementing some components for the stabilization of the clinical data repository and components. Because in the blueprinting initiative we have actually taken a holistic look at the systems and the architecture currently and identified some problems in the technologies that were delivered to us.

One example of a technology that was delivered to us as part of AHLTA by our contractors was a component called Tuxedo and another component called XML Proxy. XML Proxy was a prototype developed by another one of the companies. That is in our production system. That was never verified and validated, and it was delivered in our product, which is a problem.

As far as the cost for going forward, we have already began reusing some of the features and some of the systems that we currently have in place. Because you don't need to replace the entire system at one time. You can do it in a phased approach, much like the industry partners have in their best practices.

So, ultimately, we will be able to recoup some of the costs going forward and should, after we implement the blueprint, come up with a realization within the next couple of years of some of that cost or cost avoidance. I hesitate to give you a cost as a total, because we haven't finalized the blueprint, and the blueprint is going to identify different technologies and capabilities that we can use within the infrastructure that should drive the cost down.

Mr. WILSON. And are you working with the Veterans Administration? It was encouraging to me to visit the Beaufort Naval Hospital and see the Veterans Administration and DOD within the same building. Are you working together to achieve, again, the seamless transition of records?

Mr. CAMPBELL. Yes, sir. In fact, we brought nine members of the Veterans Administration down to our developer for them to spend two days with us to really take a look and dive deep into exactly what we were doing with this new enterprise service bus, with the new infrastructure that we are building, with the new GUI that we are building. And so they have had an opportunity. We have had this discussion with them.

We can say the folks that were there were very excited about what they saw and how we could potentially use this together help solve the issues of interoperability. So they were very happy with what we saw, and we are going to continue with those discussions on how we can do that and build on the interoperability piece.

Mr. WILSON. Well, again, I want to thank all of you. However we can promote, for the safety of the patients, the veterans, the active duty personnel, their families, that is a concern I believe we all have, and you do, too. So however we can help, however I can work with my colleagues and you to provide a seamless record system, unified—whatever the term is today—I certainly want to work with you. Thank you very much.

Mrs. DAVIS. Dr. Snyder.

Dr. SNYDER. I will make one factitious comment and ask one question of Dr. Casscells. I know the chairwoman is concerned about the passage of time.

I appreciate your candor. I know you all have been working on this for some period of time now, and I appreciate your efforts. I know you are trying to make it. You got the end game in mind, and I appreciate that.

I figured that we went wrong with the name. Not one of you used the real name today, AHLTA, the Armed Forces Health Longitudinal Technology Application. I mean, most of you probably didn't know what it stood for—all of us don't. When you have a system that the name doesn't even convey what you want—I would call it "Easy," easy for everyone. It has to be easy for providers. It has to be easy for patients. It has to be easy for TRICARE. But that doesn't even convey what the goal is. I don't even know what that is. It is probably a North Korean space launch code or something.

I wanted to ask, Dr. Casscells, my general question is, why was this early on—and I think you all touched on this. Maybe Mr. Morris would be the person to ask, but I will start with you, Dr. Casscells. Why was this not from the get-go a Web-based system? It seems like some of the problems we have been talking about would have been—I can't compare you to Bank of America if you are not a Web-based system. So where was the problem? Why was the decision made—it may have been the right decision. I just don't understand. Why is this not a Web-based system?

Dr. CASSCELLS. I think it was for security reasons, but I wasn't there at the time.

Chuck, do you recall.

Mr. CAMPBELL. Yes, sir. Originally, when they looked at AHLTA—and this was back in 1996 when they first started talking about AHLTA—it was originally looked at to be a Web-based system. But the determination at the time was that the Internet, the Web wasn't ready to be able to handle the amount of data that was flowing back and forth with this system. And so, based on that, they made the decision to go with a central repository. So we have been working on that ever since.

So now we are saying we are trying to meet today's providers' expectations with a decade-old technology. We can't do that anymore. We have to change the technology to be able to provide faster capabilities to our providers.

Dr. SNYDER. Is it fair to say, Mr. Campbell, do you think if we were starting today, didn't have any system in mind, that a Web-based system would be probably the way we would go? They're more secure now than we thought they were. Obviously, we can handle big volumes with movies and everything. Do you think that is a fair comment?

Mr. CAMPBELL. Yes, sir. If we were starting again today, that Web-based system would be the way to go.

Dr. SNYDER. Thank you.

Mrs. DAVIS. Thank you.

Mr. Murphy.

Mr. MURPHY. Thanks, Madam Chairwoman; and, gentlemen, thank you for what you do for our Nation, for our warfighters, and our veterans.

Is the series of patches that you are talking about, will it become, then, a Web-based system, or no?

Mr. MORRIS. The enterprise architecture strategy, moving ahead, is going to be a Web-based strategy; and it takes into account those systems. So this is a holistic approach, not just a patch to broken system or an old legacy system. This is a complete modernization strategy of those.

Mr. MURPHY. And when is the plan for it to be integrated and operational?

Mr. MORRIS. I am not sure if you stepped out earlier. I went over some of the timelines, but I can repeat those. And I can submit our timelines for the record if you would like as well.

Mr. MURPHY. Can you give them again?

Mr. MORRIS. We have the graphical user interface, which is probably one of the pieces you are interested in. We already have the prototype developed, and that will actually be delivered as a framework that—which developed to 31 May of this year. We talked about accelerating the timelines for being able to do that, and that is just one example.

Our enterprise service bus, which will allow the interoperability of our legacy systems and modern systems, is already developed. It was actually delivered on 10 February, so this past February. And the unified data scheme is to allow for the interoperability as well as already—it will be delivered this month.

The blueprint for the enterprise architecture will be delivered this month, of which then we can build our final timelines with milestones and everything and have those available with costing models as we move forward.

Mr. MURPHY. So the bottom line is that it could be, if we implement the system, invest in it, it can be at providers as quick as when?

Mr. MORRIS. The overall strategy right now that we are projecting is less than a three-year strategy. Because we have already started to implement some of the best practices from industry into our business practice to date. So instead of taking decades to develop solutions, we are talking months to just a couple of years.

Mr. MURPHY. So we are talking three years?

Mr. MORRIS. Less than three years, yes, sir.

Mr. CAMPBELL. Sir, if I could, one of the things that building this service-oriented architecture and building an enterprise service bus allows us to do is it allows us to build to certain standards. So when we build services that we can use within Department of Defense, some of those services can be built by the VA, some can be built by the Indian Health Service, Department of Justice, Defense Manpower Data Center (DMDC). A variety of organizations can help build those particular services. We build them once across the government and/or the commercial market and we can use it in many instances. So that helps speed up the process of providing capabilities. So that is the strategy that we are working with the VA right now, is to start building those common services.

Mr. MURPHY. Would it be potentially interoperable with private industry as well?

Mr. CAMPBELL. Absolutely, sir. We are working very closely—us and the VA together are working very closely with Health and Human Services. And we were working with them way before they were—we were working with them when they were broke. So now

that they have money, we are still working with them. But we want to make sure that everything that we do in building that gateway to be able to share information with all of the commercial partners, our TRICARE partners, and any place that our beneficiaries can go so we can capture back that information.

Mr. MURPHY. What is your opinion or your analysis of why the Army did not concur?

Mr. MORRIS. I can't say based on that. We sent queries back out for information as to why they didn't concur with the plan. So I can't comment.

Mr. MURPHY. Would anybody want to speculate on why the Army did not concur? Currently you are the only Army guy there. I don't want to put you out. I know there are a lot of generals in the room.

Colonel HINES. Sir, I represent the Defense Health Information Management System. I don't know really why the Army nonconcurred, but I can tell you this, working with the new enterprise architecture, being able to share data in our IT, enterprise service bus, we are building new technology now.

I heard the services repeatedly say that we don't have capability. That is true today. But next year this time we will have tremendous capability in the areas. We will have an inpatient system that we hope to have a contract award today. We will also have capability to support neurocognitive assessment testing. And we will also have the capability for the health artifacts and information management system to help us be able to share images more seamlessly and easily. We will also have information where we will be able to share with the finance community on our injured patients in the area of the defense disability evaluation system and clinical case management. We are doing a lot of things.

The problem that we experience, by the time that we identify the requirement that we need to get it done to support our service members and our customers who are the services, we have to take advantage of an acquisition model, and that kind of slows us down. I don't think our customers really understand that. But there are rules and regulations and laws, the E–5000, that we must follow.

At the same time in a war effort we have the responsibility to provide capability now, and sometimes they don't go hand in hand. We have to provide capability now, but at the same time we have to work through the acquisition model to marry up. And to be honest with you, here lately the theater medical information program is a perfect example of that, where we had critical information as you heard General Green talked about when he was at Landstuhl before they didn't have the information coming to theater. We are getting the information from theater to Landstuhl for the continuity of care. At the same time it broke or caused us to have a critical 144 change in terms of it was 25 percent above our baseline.

Mrs. DAVIS. Excuse me, Mr. Murphy. General Schoomaker is still here, and I appreciate the general, your being here. Is there anything you would like to add to your question about the Army's involvement? Did I put you on the spot, sir?

General SCHOOMAKER. No, I am here to answer questions. I can just tell you in candor, although I respect them I work with every one of these people at the front and we fully understand Claude,

the DOD acquisition law. But Mr. Morris has a plan, he doesn't have a strategy. We asked for a strategy. A plan is just one element of a larger strategy, and we asked for a strategy and our involvement in that strategy. And so with respect that is what we in a sense partially nonconcurred with.

Mrs. DAVIS. Thank you.

Mr. MURPHY. If I could just follow up with the Colonel real quick. We were talking about the DOD and the Veterans Administration are two of the largest health care providers in the world. Per year as a Congress we have spent $100 billion on that. We should take care of our troops, I was one of them, absolutely, positively.

One of the top three reasons why providers leave the practice of the VA system and the Department of Defense is because of AHLTA or VISTA. So does the new technology that you are referring to and the plan which could be potentially implemented within three years, does it solve the problem where the doctors don't want to use it in your opinion?

Colonel HINES. Sir, I would say from this perspective we have the providers from the services participating with us in terms of all the new technology that we actually are bringing in. They also sit on our board, on our source selection boards in terms of the capability that we actually go in after the support of different business practices.

So from my perspective the answer is yes. Will this solve it totally today? No. But I think we are moving in the right direction.

Mr. MURPHY. And it is your opinion, Colonel, that this is the system that the private industry could tap into down the line when you look at HHS and private providers?

Colonel HINES. Yes, sir. We are using the standards that are being implemented by HHS, we are moving to HL 73.0 for instance, working with Mr. Morris in the enterprise architecture. So everything will be standard based. Today a lot of our systems are not. From this point on all our systems will be following the national standards.

Mr. MURPHY. How much money would it take to get the VA and the Department of Defense on board within three years to implement your plan?

The testimony today was that in three years providers could tap into the system, and so what is the plan and how much would that cost. So if you are at a community hospital at West Point or Landstuhl in Germany or Eagle Base in Tuzla, Bosnia, the clinic there, how much would it take to invest in the infrastructure so that our providers in the field, in Washington, no matter where out there because it is a global force tap into.

Mr. CASSCELLS. Congressman, I better take that bullet. We are still wrestling that with Office of Management and Budget (OMB) right now. We are not allowed to discuss it. Let me just say that compared to the last time I testified about this topic when we were looking at industry estimates of 2015 for completion and cost in the $10 billion range, one of them was up to 15 million. We are much—the new architecture looks like we will be must faster on the order of under three years, as Tommy Morris was saying, cost well below those estimates, but I am not allowed to talk about the specific dollar numbers right now.

Mrs. DAVIS. Thank you for trying, Mr. Murphy. I appreciate that.

You have mentioned the acquisition and some of the problems around this, and I wonder if you could just speak to the Directive 5000.01 and the DOD directive and to what extent that acquisition process actually gets in the way of implementing these IT systems. We understand that it doesn't necessarily work as well as it might in some other areas. What steps, what recommendations would you have to improve it for IT systems? What ought we be doing?

Mr. Harp.

Mr. HARP. Yes, ma'am. The Department recognizes the need to change. In fact there is an ongoing Defense Science Board (DSB) study that is going to be delivered at the end of this month to the Congress that has done an in-depth look at how we can reform our acquisition process.

Fundamentally what happened with this program is it faced three major challenges. It faced the challenge of being a joint system where we were trying to impose a single standard across the whole services when even within the services, people, doctors were not doing things the same way. So that was a big challenge. And when it reached its Block 1 full operational capability in 2006, basically we had fundamentally standardized the process.

The technology, the IT challenge, the technology turned within our acquisition process. At the same time, coincidentally about the same time, 2006, we issued new net centric strategies, new data strategies within the Department to look at going to the service-oriented architecture type approach, because we recognize the benefits in both speed, time to market, and cost, reduced cost, in moving to that approach.

The AHLTA program at the end of Block 2, recently you heard the story about how they went through all the steps to start adopting that strategy and they had begun implementing that in earnest last fall when we basically terminated the Block 3 and beyond effort to shift to the new strategy.

Another issue that didn't really come out is that when AHLTA was conceived it was a hospital-based system. It was not designed to go to the front. So the requirements have also changed significantly in this program. The fact that they actually made it through our process, our acquisition process relatively cleanly is commendable, that they were able to do that. They were able to adapt new technologies that they could and absorb the new requirements that came out of theater and then deliver basically on schedule Block 1, although it had some inherent bandwidth problems and some problems on timing and so forth we still have to work on. Those are artifacts of the technology that was chosen in the 1990s, and they are fixable but it will take some time, as they discussed.

So I think to answer your question on the acquisition process, we have been struggling with the overlap of Title 10 and Title 40 in the Department for 10 years. The DSB is kind of finally getting that all together into one place so we can look at it and we hope to make some changes in the future later this year, come forward with some potential changes to our process so that we can turn things faster.

We are faced with a situation where the technology changes faster than our budget process and it changes faster than our require-

ments process and eventually faster than our acquisition process. So by the time we plan a system and the time we start to execute it, the technology has already gone through three cycles.

Mrs. DAVIS. Yes.

Mr. HARP. That is the challenge we have, and we are trying to find ways to adapt to that and hopefully we will be coming forward later this year with a way ahead.

Mrs. DAVIS. Thank you, I appreciate that. And perhaps that goes back to General Schoomaker's comment that we are looking for a strategy here that will be adaptive to all of that and not set in a pattern that perhaps is not helpful any longer.

Mr. HARP. I would like to add that one thing that all they are doing today would not have been possible without AHTLA Block 1 where we got everybody standardized. Just starting up to a Web-based system doesn't work if everybody is using different standards and different pictures and handwritten drawings. They needed to get that standardization, if you will, I will call it, across the services so now we can leverage that and move to the new technology.

Mrs. DAVIS. Thank you very much. I appreciate that. I certainly appreciate the testimony that you have all brought and your responsiveness. The real issue that I continue to pick up though is if everybody is at the table, and someone is listening and if we are actually moving and changing to do what is best because this is all about the men and women who serve our country, and we have to keep focused on that. So I ask you to help us out with that. That is really what is so key here and so important.

I want to thank you all. I wanted to ask you if perhaps a September time frame would be helpful in coming back to the committees and having a chance to see what that progress has been because one the difficulties that we face here is it was a long time to bring folks back together. And we know because often reports come out the morning of the hearing that it does focus some of that activity. And so perhaps we can have a date in September that we can come back and understand if we met some of those three-month timelines that you suggested and if we are really on target, trying to integrate the technologies and certainly interface with a national standards system that we hope to have up in a few years, it is critical for the country as well as for the military. So we will do that.

Thank you all so much for being here.

[Whereupon, at 12:15 p.m., the joint subcommittee was adjourned.]

A P P E N D I X

March 24, 2009

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 24, 2009

Statement of Military Personnel Chairwoman Susan Davis
Joint Hearing with the Terrorism, Unconventional Threats and Capabilities Subcommittee on "Department of Defense Health Technology: AHLTA is 'Intolerable', Where Do We Go From Here?"
March 24, 2009

"Today we will have a joint hearing of the Military Personnel Subcommittee and the Terrorism and Unconventional Threats and Capabilities Subcommittee.

"I would like to thank Chairman Smith, Vice Chairman McIntyre, Ranking Member Wilson, and Ranking Member Miller for this joint hearing. The Military Personnel Subcommittee is tasked with oversight of the Defense Health Program, to include all operations of the Military Health System, and the Terrorism and Unconventional Threats and Capabilities Subcommittee is tasked with the oversight of all Department of Defense Information Technology (IT). This is clearly a topic where our responsibilities intersect, and I appreciate the willingness of the two subcommittees to cooperatively provide this oversight.

"It is important to note that Health IT is handled differently by the Department of Defense than most other IT programs. It is currently centrally managed by the office of the Assistant Secretary of Defense for Health Affairs/TRICARE Management Activity. At our hearing last week on medical military construction, I observed that by using the word 'different,' I was not trying to say that it is bad-different or good-different, just different.

"The Military Personnel Subcommittee held a member briefing about Military Health System IT, specifically problems with AHLTA, back in October of 2007. The original plan was for the members to be briefed by subject matter experts, but we were pleasantly surprised and impressed that the Assistant Secretary of Defense for Health Affairs/Director of the TRICARE Management Activity, Dr. Casscells, was able to attend, and also brought along the Deputy Director of the TRICARE Management Activity, Major General Elder Granger, and the Military Health System Chief Information Officer, Mr. Chuck Campbell.

"During the briefing many promises were made about the plan to fix the system, and after the meeting a roadmap was provided to the members. However, the committee was surprised when the former President's FY09 budget for the Department of Defense contained none of the initiatives from that roadmap. All that was included in the budget request was fielding of the dental module of AHLTA.

"By the summer of 2008, as the result of a groundswell of provider dissatisfaction, Dr. Casscells met with the committee staff to admit that state of the current system was unacceptable. In fact, he described it as 'intolerable' in a Government Executive

interview, hence the title of our hearing today. Dr. Casscells was clear that all options, to include scrapping the current system, were under consideration.

"One of the purposes of this hearing is for Health Affairs to present their plan for fixing the system. We are frustrated with how the department has handled this issue given its importance to providing medical support to our service members and their families. We expect to hear firm dates for the development and fielding of the fixes or new systems, as well as projected or already incurred costs.

"First, and perhaps most importantly, we will hear from the services about what they require from the department's health IT system and just how involved the services are in the development, programming, and budgeting of these systems.

"We are fortunate to have with us today representatives from each of the services' medical surgeons-general. First, Lieutenant General Schoomaker, Surgeon-General of the Army, Major General Green, Deputy Surgeon-General of the Air Force, and Rear Admiral Cullison Deputy Surgeon-General of the Navy. Gentlemen, welcome.

"Our second panel will be comprised of witnesses from the Office of the Secretary of Defense. I will make more detailed introductions before that panel offers their testimony."

Statement of Terrorism, Unconventional Threats and Capabilities
Vice Chairman Mike McIntyre
Joint Hearing with the Military Personnel Subcommittee on
"Department of Defense Health Technology: AHLTA is 'Intolerable',
Where Do We Go From Here?"
March 24, 2009

"I would like to begin by thanking Chairwoman Davis for offering to hold this hearing with our Terrorism, Unconventional Threats and Capabilities Subcommittee. Our two subcommittees have been working closely over the past two years looking critically at Department of Defense activities in developing and deploying health information technology (IT) solutions for military health care applications.

"Traditionally, the Terrorism Subcommittee has been very focused on IT issues, including the unique acquisition challenges posed by IT and the pressures imposed by the short development cycles of the commercial IT world. Cooperating with the Military Personnel Subcommittee to leverage their expertise and understanding of the health care world has been an outstanding partnership.

"Today's hearing gets to the heart of two separate but related issues that will have broad implications on the future of not only the Department of Defense, but also the wider federal government – the application of IT to improve the delivery of military health care and the acquisition of IT systems to meet DoD needs.

"We have two impressive panels of witnesses, all of whom I'd like to commend for their service to the nation and their hard work to improve the daily lives for our warfighters and their families. I think it is important that we hear from the military services so that we can gain a better appreciation of the requirements that they need addressed by any military health IT solution, as well as the daily challenges they face in trying to utilize the systems that are currently available. That is necessary if we are to understand how we can help shape a better functioning and user friendly system.

"It is equally important to hear from the system developers to find out what actions they are taking to address these concerns, and what actions they believe are necessary to achieve better outcomes for the systems we deploy, as well as the services that are offered. Today's hearing provides a baseline against which we will measure the Department's progress."

Statement of Military Personnel Ranking Member Joe Wilson
Joint Hearing with the Terrorism, Unconventional Threats and Capabilities Subcommittee on "Department of Defense Health Technology: AHLTA is 'Intolerable', Where Do We Go From Here?"
March 24, 2009

"Thank you Chairwoman Davis. I appreciate joining our good friends on the Terrorism, Unconventional Threats and Capabilities subcommittee today, led by my long-time friend Vice Chairman Mike McIntyre and the extraordinary Ranking Member Jeff Miller, for our hearing on the Military Health System's information technology and electronic health record. I welcome the distinguished members of our two panels.

"A unique aspect of military service is that military members and their families move every few years. For that reason alone, it is critical that the Department of Defense have an electronic health system that can follow our military wherever they happen to be...including in a combat zone. I know first-hand of its importance, with four sons currently in the military—two have served in Iraq, another in Egypt, and the fourth just joined the Army National Guard. We must have a military health system capable of documenting health care provided to service members throughout their time in the military and be accessible to the Veterans Administration when they leave military service.

"Thirty years ago the Department of Defense recognized the need for an electronic health system. To their credit, the Department began the enormous task of developing and fielding a system designed not only to function as an electronic health record but to also capture health data that can be used for population screening and medical surveillance.

"Today we will hear from our witnesses about the DOD electronic health system known as AHLTA. While I applaud the Department for the tremendous effort it took to field this system, I have serious concerns about the state of this system today.

"The committee has heard from military doctors and nurses who use AHLTA that it is unreliable, difficult to use, and has decreased the number of patients they can see each day. We have also heard that medical professionals leave the military because of their frustration with AHLTA.

"I hope our military service witnesses here today will touch on what they believe needs to be done to make the system work for their medical professionals. From the DOD witnesses, I would appreciate their perspective on how they plan to fix the system to make it more reliable, user friendly and easier for our terrific military personnel to provide the best medical care to our troops and their families.

"With that, I would like to thank our witnesses for participating in the hearing today. I look forward to your testimony."

Statement of Terrorism, Unconventional Threats and Capabilities
Ranking Member Jeff Miller
Joint Hearing with the Military Personnel Subcommittee on
"Department of Defense Health Technology: AHLTA is 'Intolerable',
Where Do We Go From Here?"
March 24, 2009

"I represent the First District of Florida, home to the largest number of military veterans in the country and to Eglin Air Force Base, Air Force Special Operations Command, Naval Air Stations Pensacola and Whiting Field, Corry Station, and very soon the Joint Strike Fighter and the 7th Special Forces Group. Ensuring this already sizeable, and growing, military population receives the best medical care possible is foremost in my mind as a member of this committee as well as of the Veterans' Affairs Committee.

"The military health care system is increasingly complex, with care provided through an extensive network of hospitals, clinics, and private providers, not to mention the significant capabilities needed to care for our deployed forces, who are in harm's way. With over 9 million beneficiaries in the Department of Defense health care system, achieving efficiencies in treatment and the business of providing care is increasingly important, and, as Congressional members, we have a responsibility to ensure the best care is provided to the men, women, and families who have given so much to provide for our nation's security.

"The use of an electronic medical record, allowing a patient's treatment history to follow him through the system, at all points of care is one way of improving beneficiary care. When one considers the speed with which combat casualties are removed from the battlefield to higher levels of care, the importance of ensuring the treating physicians have access to a patient's medical history becomes clearer. Stateside, beneficiaries receive care at multiple facilities, and, as is the case with many veterans, from Department of Defense and Veterans' Affairs (VA) facilities, further highlighting the importance of effectively transmitting medical information between providers.

"To this end, the Department of Defense has made a significant investment, over $4 billion to date, in its version of the electronic medical record system, called the Armed Forces Health Longitudinal Technology Application (AHLTA). Meanwhile, the VA has been using a different system, VistA. Implemented in January 2004, AHLTA has faced significant hurdles in gaining acceptance from the health care provider community. Given the fact that the predecessor system to AHLTA was the Composite Health Care System, originally a scheduling and workload capture system that later morphed into an early version of an Electronic Medical Record, some believe AHLTA is destined to be more of a workload management tool rather than a health care provider tool. In a town hall forum last June, providers shared complaints and issues with AHLTA, ranging from excessive data recall times that actually reduced efficiency to an inadequate user interface that

makes the effective transmission of medical information, the ultimate goal of an electronic medical record, near to impossible. Compounding the concerns, AHLTA has failed to effectively interface with the VA's VistA system.

"Now, I believe that electronic medical records play a very important role in the future of health care. I am greatly concerned, however, with the path that AHLTA has taken. After a $4 billion investment, and another $2 billion that may still be required for AHLTA updates that may not ultimately resolve the underlying issues with the system, I wonder what the Department must do to ensure that providers have the medical information needed to render care and that the beneficiaries receive the best care possible.

"I think today's hearing is important to help us understand what the road ahead is for AHLTA and how we get to an electronic medical record that is usable, accessible, and complete and that can communicate with the VA's system. As the ranking of the Terrorism, Unconventional Threats and Capabilities Subcommittee, I am involved in Department of Defense Information Technology (IT) programs and am especially interested to hear what governance structure the Department has in place to manage the acquisition of medical IT systems such as AHLTA and how the Military Health System can leverage IT expertise within the Department to the benefit of the health care community. And I will be very interested in knowing how the Department plans on reconciling the apparent incompatibility of AHLTA's provider functions with the business functions.

"We owe the beneficiaries of the DoD health care system as well as the taxpayer our sincerest effort on this matter. I look forward to the testimony of today's witnesses."

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FINAL VERSION

STATEMENT BY

LIEUTENANT GENERAL ERIC B. SCHOOMAKER, MD, PhD
THE SURGEON GENERAL OF THE UNITED STATES ARMY
AND COMMANDER, US ARMY MEDICAL COMMAND

COMMITTEE ON ARMED SERVICES

SUBCOMMITTEE ON MILITARY PERSONNEL
AND
SUBCOMMITTE ON TERRORISM AND UNCONVENTIONAL
THREATS AND CAPABILITIES

UNITED STATES HOUSE OF REPRESENTATIVES

FIRST SESSION, 111TH CONGRESS

DEPARTMENT OF DEFENSE HEALTH INFORMATION TECHNOLOGY:
AHLTA IS 'INTOLERABLE', WHERE DO WE GO FROM HERE?

24 MARCH 2009

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
COMMITTEE ON ARMED SERVICES

Chairwoman Davis, Chairman Smith, Representative Wilson, Representative Miller, and distinguished Members of the Military Personnel and Terrorism and Unconventional Threats and Capabilities Subcommittees, thank you for the opportunity to discuss AHLTA, the electronic health record (EHR) system for the Department of Defense (DoD). The Army Medical Department (AMEDD) has long recognized the critical importance of an EHR as the linchpin for continuity of care throughout the lifetime of a military healthcare beneficiary and across a global array of medical encounters. It is a critical enabler of evidence-based, science-driven and outcomes-focused medical practices which will lead to improvements in and sustainment of health as well as the provision of leading edge multidisciplinary healthcare services. All of these rely upon a knowledge network of personal health databases and analytic tools applied to this information in a highly personalized fashion led by patient choices about their health and healthcare. I call it knowledge-centric warfare against disease and injury in a healing environment. I strongly believe that an effective and usable EHR will also contribute immeasurably to reducing the cost of Federal healthcare and sustaining a generous healthcare benefit for Soldiers and their Families.

The Army recognized this need for an EHR very early and led DoD on a journey to leverage information technology. The AMEDD has hosted six EHR/AHLTA Summits to coordinate, synchronize and integrate efforts in this arena for our general officers and other senior leaders in Army, Military and Federal Medicine—our most recent EHR Summit was held two weeks ago at the Army Medical Command (MEDCOM) Headquarters in San Antonio, Texas. Moreover, given the information explosion in healthcare, I recognize the need for an electronic health record that is a mentor (clinical decision support) and a knowledge generator rather than a mere collector of data. With your help, I am confident that our global EHR will enhance continuity of care, medical surveillance and empower our providers to deliver the best evidence based healthcare in the world. Given the longitudinal nature of our data from our beneficiaries, the knowledge from our EHR will serve as a means for continuous learning and research. I also believe passionately in our journey towards

personalized medicine and the role our EHR will play in our ability to predict, prevent and preempt diseases.

From the Army's perspective, AHLTA has had significant impact on our AMEDD providers and patients. We were an early adopter of AHLTA, and while AHLTA has only achieved some of its initial vision of a globally available EHR system, providers have been less than satisfied with its performance, reliability, and usability. Army has taken significant steps to improve usability of AHLTA and provider satisfaction. It should be noted that there is no easy alternative to AHLTA, and there is no existing commercial system or federal system that currently can immediately meet the needs of the DoD given its global and mobile population. The most recent version of AHLTA, despite its past and current challenges, is showing improvements and appears to be well-accepted by providers. In addition, a new proposed enterprise architecture for the MHS will likely result in a significant improvement in managing our information systems.

I look forward to your guidance and continued support for the advancement of a viable and fully accepted EHR that meets the DoD's mission.

Vision of AHLTA

The Department's original vision of AHLTA was for a comprehensive, global electronic health record. It was intended to allow providers secure electronic access to the comprehensive health record of a highly mobile DoD population; from the battlefield to the treatment facility. The envisioned global EHR would enable provider-level decision support and clinical surveillance. Over time, the vision evolved and expanded to allow our EHR to exchange medical record information with the Veterans Health Administration, Department of Veterans Affairs, with the ultimate goal that one day it will be interoperable with health systems nationally.

Currently, AHLTA is deployed worldwide to 70 hospitals, 410 clinics, and six dental clinics across the Military Health System (MHS). The AMEDD comprises approximately 30% of the total number of facilities and 49% (1,337,300) of the total DoD monthly encounters. AHLTA is also fully deployed

across the theater of operations to 14 theater hospitals and 208 forward resuscitative sites. The next phase of deployment, which is scheduled to being this spring, will field AHLTA to the remaining 362 dental clinics.

Barriers to Success

Despite the extensive fielding of AHLTA across the MHS, the system has not yet achieved the vision and goals as originally established. The AMEDD has been largely frustrated by a number of obstacles that continue to impede the system capabilities and functionality. The major issues to date have been: performance, reliability and usability. The Department is proposing a Unified Strategy Regional Distribution Approach for AHLTA in order to address these issues. The first phase of the Approach focuses on improving the user experience by stabilizing performance, reliability, and the core infrastructure.

Strategy

The identification and implementation of a comprehensive strategy, metrics, prioritization and financial accountability will be the keys to the future success of an outcomes focused EHR. EHR projects require a clearly defined IM/IT governance process to guide the vision and strategy for the development and fielding of the entire EHR to include the ability to track and maintain accountability. As we move forward, governance processes must be agile enough to incorporate the unique challenges of not only a Tri-Service Active Duty environment, but a much more comprehensive environment to include Veterans Health, the Reserve Components, and civilian healthcare.

Performance

The system's performance is challenged by one of the world's fastest growing Clinical Data Repositories (CDR) along with multiple points of failure in our system. One significant impact of this performance is the slowness of the system. For the providers, it can take a long time to view the separate modules during a patient encounter, especially when reviewing previous encounters,

leading to potential patient safety issues. Even when the system is functioning, the system can be sluggish, which impedes the provider's efficiency and detracts from time spent with our patients.

Reliability

There are multiple single points of failure to include the CDR and MHS network, with an unacceptable (on average 7% in 2008) amount of downtime. Although the system goes into Failover mode when the CDR is down, providers have a limited capability to view past information and document the patient care. Reliability of the data provided with patient documentation is a significant concern for providers, specifically those associated with duplicate patient records and AHLTA's current inability to easily and effectively perform medication reconciliation and manage the patient's problem list.

Usability

Many providers find the quality of AHLTA clinical encounter notes generated by the graphic user interface (GUI) to be less than acceptable, and most providers are now using more free text to address this issue.

At the corporate level—Service and MHS-wide—we do not have effective data-mining tools to permit us to track compliance with evidence-based practices or to measure the achievement of population health measures. We in Army Medicine are leading in incentivizing providers, clinics and hospitals for providing health promotion and healthcare services in compliance with national guidelines for disease prevention and evidence-based practices, respectively.

AMEDD Initiatives

To influence effective governance, I directed the establishment of the Office of the Chief Medical Information Officer (OCMIO) in the Army to address four challenges: 1) Improve trust and satisfaction of providers with AHLTA; 2) Bring providers timely, actionable, quality information to improve healthcare at the point of care; 3) Deliver timely solutions that meet the needs of our providers

while balancing innovation with standardization to achieve desired outcomes and optimization;. 4) Develop an EHR strategy which supports personalized medicine.

The Chief Medical Information Officer's (CMIO's) mission is to be the premier advocate for clinical information systems for providers and serve as the liaison between the healthcare community and AMEDD leadership. The CMIO will work with MHS to design, develop, implement, and support/sustain clinical information systems to improve quality, safety, and outcomes in healthcare while creating a culture of excellence and quality through health services research, system change management, healthcare information technology, and leveraging regional and facility innovation. To meet my first challenge, the CMIO has initiated the MEDCOM AHLTA Provider Satisfaction (MAPS) initiative. Key components of the MAPS initiative include: provider choices for tools and technology, relevant and viable training, and provider support.

To enhance providers' choices for tools and technology, we invested in industry tested, commercial off-the-shelf (COTS) software applications to enrich documentation and allow providers some freedom to select various tools to use with AHLTA. These tools include Dragon Medical™, which offer the provider the capability to dictate their notes directly into AHLTA using the voice recognition software. With the power of specialty-specific macros, tools like As-U-Type® now provide our staff with tools that allow them to complete an encounter note in less time than ever before. In addition, a dedicated website, https://vmc.amedd.army.mil, consolidates all of these macros for collaboration and exploitation across the AMEDD. With such tools, providers have been able to gain control over their practice by having more time to listen to their patients with less time required to document each visit.

As incredible as these tools are, they would be useless unless the providers were given relevant training and support to maximize the tools' capabilities. A new provider-focused curriculum was developed and finalized this past December, and one-on-one training is currently in progress across select sites. These tools, with accompanying individualized training and business

process re-engineering led by clinical champions, has facilitated and fostered buy-in from the providers. While MAPS does not address AHLTA's inherent operational and functional shortcomings, it has improved the user's interaction with the system. MAPS serves as an enhancement and catalyst for the AMEDD's clinical transformation, and is beginning to show a significant improvement in the usability by, and the satisfaction of, our providers with AHLTA.

As part of the Army's celebration of 2009 as "Year of the NCO", I would like to recognize Staff Sergeant (SSG) Charles Bailey, a medic at Landstuhl Regional Medical Center (LRMC) in Germany, an AHLTA "Super User" and MAPS champion for the Department of Orthopedics. He has been working closely with Dr. Robert Walker, the MAPS clinical lead. With the support of Dr. Walker, SSG Bailey has been instrumental in making MAPS successful at LRMC while also serving as a model user for the AMEDD.

Way Ahead for the EHR

The AMEDD's greatest asset is our people, and our commitment to provide the very best healthcare to our Soldiers, Families and retirees remains strong. Our healthcare professionals need the right tools to continue to provide world-class care. Prompt attention must be directed toward resolving patient safety issues to restore providers' confidence in the quality of the patient documentation. Lastly, I endorse Health Affairs' proposed plan to move to performance based contracts when feasible and to separate IM/IT integration contracts from the development contracts.

In closing, I want to thank the committee for its interest and support in ensuring that our great Soldiers and Families receive the best possible care by leveraging all available information technologies. Although AHLTA continues to be challenging to its users within Military Medicine, the AMEDD recognizes the remarkable benefits of an electronic health record and remains fully committed to partnering with HA to collaboratively define a coherent way ahead for the EHR.

**Not for Publication until released by
the House Armed Services Committee**

Statement of

Rear Admiral Thomas Cullison, MC, USN

Deputy Surgeon General of the Navy

Before the

**Subcommittee on Military Personnel
and
Subcommittee on Terrorism and
Unconventional Threats and Capabilities**

of the

House Armed Services Committee

Subject:

Department of Defense Health Information Technology

March 24, 2009

**Not for Publication until released by
the House Armed Services Committee**

Chairman Smith, Chairwoman Davis, Representatives Miller and Wilson, distinguished members of the committee – thank you for the opportunity to testify before you today on the Military Health System's Health Information Technology (IT) systems.

Sailors, Marines and their families deserve the best health care in the world. Navy and Marine Corps world-wide presence requires constant global access to current patient data for appropriate clinical decisions at sea, ashore in the Middle East (e.g. Iraq, Afghanistan, etc.) and in military treatment facilities (MTFs) aboard our bases and stations. The Navy and Department of Defense (DoD) are working to improve our enterprise-wide medical and dental clinical information capability which generates, maintains, stores, and provides secure access to patient records. We are driven to improve provider satisfaction and enhance our data sharing within the DoD; the VA healthcare delivery continuum; and, in the future, private sector health care.

CURRENT SYSTEMS DEPLOYED AT NAVY MTFs

Military medicine pioneered electronic patient information. The Composite HealthCare System (CHCS) provided electronic availability of ancillary services such as laboratory and radiology results, as well as scheduling and pharmacy information. The ability to electronically prescribe pharmaceuticals within DoD MTFs markedly increased patient safety using automated checks of each patient's medication record and eliminated transcription errors. This system is now dated in design and functionality. Although these capabilities were updated with solutions including Radiological Picture Archiving and Communication System (PACS), pharmacy automation systems, and numerous laboratory automated systems, complete integration remains a future goal.

Navy MTFs utilize the Theater Medical Information Program-Joint (TMIP-J) and TRANSCOM Regulating and Command & Control Evacuation System (TRAC2ES) to coordinate care for returning casualties. These systems provide clinical and demographic information from other treating facilities, including those in Iraq, Afghanistan and other operational theaters. Delays were prevented and safety was enhanced throughout our system.

ARMED FORCES HEALTH LONGITUDINAL TECHNOLOGY APPLICATION (AHLTA)

AHLTA provides a world-wide outpatient record in all military fixed MTFs. Unlike the decentralized architecture of CHCS, AHLTA is designed around a single worldwide database, the Clinical Data Repository (CDR). Utilizing CDR data requires client software installed on thousands of personal computers to interact via unique networks across the Global Information Grid (GIG). This complex system provides greatly improved electronic health record capability over the previous CHCS capability; however, we are experiencing some performance and reliability challenges as we integrate the capability throughout the Navy Medical facilities. To enhance the current capability provided by the CHCS application, Navy Medicine is jointly fielding with MHS an interim inpatient capability. A Contract award is scheduled this month.

The current application design, functional mapping, and work flow present limitations that make it difficult for clinical staff to efficiently document patient care while treating patients. Navy Medicine's clinical champions, those most comfortable with AHLTA, have created processes and methods to help others in optimizing time spent with patients while recording information. The MHS AHLTA Program Manager

incorporated over 200 of these recommendations in the most recent version, AHLTA 3.3. Numerous hardware and software problems identified during the AHLTA 3.3 beta test at Naval Medical Center Portsmouth have mostly been overcome. Subsequent release of this version across Navy Medicine has been largely successful with steady improvement in user satisfaction.

Navy Medicine is committed to providing quality training to AHLTA users at all levels. For the last two years, our sustainment training contract places one or more trainer/ consultants at each Navy MTF. These trainers/consultants provide new users initial training and current users additional over-the shoulder help to use AHLTA better and more efficiently. This effort has improved utilization and documentation quality. Trainers and MTF clinical champions work together to identify user needs to most effectively keep AHLTA users current on new features and online training resources. The sustainment training contract includes the establishment of an online training resource, www.navyahlta.com, includes tools for every type of user and is updated as AHLTA is updated.

Navy Medicine piloted AHLTA enhancements such as wireless mobile tablets and voice recognition which increase flexibility to improve provider-patient interaction. This allows providers to face their patients rather than type with their backs turned. Acceptance continues to increase across Navy medicine as we provide greater capability and focus on training. The inclusion of Dragon Naturally Speaking (voice recognition software) and As-U-Type/spell check software have also increased user satisfaction.

PERSONAL HEALTH RECORD (PHR)

Navy Medicine as part of a joint military health pilot has begun a cooperative program with both Microsoft and Google to provide PHR capability. Information from the AHLTA central data repository is now populated into a patient accessible on-line health record. This capability opens the EHR to the patient and lead to future EHR integration with commercial healthcare providers.

COORDINATION BETWEEN NAVY MTFs AND VETERANS AFFAIRS FACILITIES

In October 2010, the Naval Health Clinic Great Lakes is joining operations with the North Chicago Veterans Administration Medical Center to establish the Captain James Lovell Federal Health Care Center. This unprecedented effort provides an opportunity to combine clinical and business processes that meets the standards for common operating environments for military and VA applications. From business operations to clinical care, the two organizations are working together to treat diverse patient populations. In this collaborative effort initiatives are underway to establish a common solution to fulfill both organizations' requirements. This will be accomplished while meeting the medical needs of the about 40,000 Navy recruits each year from our only recruit training facility. Creating each new Sailor's electronic medical record is a part of this process. Any delay in this process would severely impact our ability to sustain manpower replenishment across the Navy.

JTF CAPMED

Joint Task Force National Capital Region, Medical (JTF CAPMED) establishment, highlighted by merging National Naval Medical Center and Walter Reed Army Medical Center into the Walter Reed National Military Medical Center in Bethesda, presents an opportunity for all to examine service-specific mission requirements as well as common business practices which can be best served in future electronic medical record versions. The end result should be standardized, cost effective and efficient IT solutions connecting high quality medical services in the National Capital Area with military medicine throughout the world.

FUTURE DIRECTION OF AHLTA

Navy Medicine seeks to improve provider satisfaction *and* strengthen data sharing throughout DoD, VA and our Tricare partners. We support MHS efforts to improve military health IT infrastructure and ensure optimal performance. Together with the MHS, we are developing near-term improvements to respond to provider requests for improved usability, stability, and reliability. In addition, planned mid-term advancements will improve provider satisfaction, and modernize our architecture and infrastructure. These enhancements create capability for the continual improvement of electronic health record capabilities and movement away from outdated components which require expensive sustainment efforts.

We are supporting the MHS' effort of incorporating a three-phased plan for reshaping of the electronic health system. This approach utilizes a standards-based approach for meeting current and future interoperability requirements while fulfilling

unique defense security requirements. Near-term improvements answer urgent provider requests for improved usability, stability and reliability. Mid-term and long-range advancements sustain provider satisfaction and modernize our architecture and infrastructure. Modernization efforts make it possible to integrate quickly into AHLTA new, user-friendly capabilities and reduce our reliance on outdated components that are difficult and expensive to maintain.

Our long-term goals must include solutions that acknowledge each Service's mission requirements. Navy Medicine must be able to maintain and share medical information between our operational forces and fixed medical facilities. Unlike other Services, our units routinely visit many different ports and medical facilities during each routine deployment. This requires bidirectional capability for electronic medical records aboard ship and in Marine field units which includes the ability to operate in a stand-alone mode to provide application operation in a no-communication environment. We should focus on establishing common architecture requirements that can meet our electronic medical record efforts ashore, as well as aboard a ship or far forward with Marines

Data-sharing with our Tricare network partners remains a difficult challenge. Navy MTFs developed various local information exchanges; however, none of these solutions appears to be a systemic solution. We will continue to work with the MHS, the Nationwide Health Information Network and civilian industry on this.

Navy Medicine supports progress toward an electronic inpatient record. Recent contracting activity in this direction is encouraging.

Sustainment costs may be reduced by decreasing the number and complexity of support systems required. We are investigating incorporating a thin client solution to increase capability for remote access to AHLTA by moving the application off of the end user device to a regional server. This will not only provide greater access to our clinical staff, but also the Reservists, National Guard, Marine Corps and Fleet (in port) medical personnel. MHS remote access architecture will provide the long term solution planned for FY10.

Thank you again for the opportunity to testify before you today on the state of health IT and Navy Medicine. I am eager to see how the recent improvements provided by the MHS will impact our ability to provide healthcare services. I am convinced that improvements in electronic medical records will have a positive impact on the healthcare provided our Sailors, Marines and their family members.

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE COMMITTEE ON ARMED SERVICES

SUBCOMMITTEE ON MILITARY PERSONNEL AND

SUBCOMMITTEE ON TERRORISM, UNCONVENTIONAL THREATS AND CAPABILITIES

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: Department of Defense Health Information Technology: AHLTA is "Intolerable", Where Do We Go From Here?

STATEMENT OF: Major General (Dr.) Charles B. Green
Air Force Deputy Surgeon General

March 24, 2009

NOT FOR PUBLICATION UNTIL RELEASED
BY THE COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

BIOGRAPHY

UNITED STATES AIR FORCE

MAJOR GENERAL (DR.) CHARLES BRUCE GREEN

Maj. Gen. (Dr.) Charles B. Green is Deputy Surgeon General, Headquarters U.S. Air Force, Bolling Air Force Base, D.C. As chief operating officer, he directs all operations of the Air Force Medical Service, a $5.1 billion, 43,100-person integrated health care delivery system serving 2.4 million beneficiaries at 75 military treatment facilities worldwide. Simultaneously, he oversees the functions of the Air Force Surgeon General's Office comprising seven directorates with offices in Washington, D.C.; San Antonio, Texas; and Fort Detrick, Md. Included in these functions are clinical quality management, force management, strategic planning, readiness planning and operations, medical doctrine and training. Also included are medical programs and resources, full-spectrum medical care, aeromedical evacuation, force sculpting and information systems management. He also oversees the strategic management process, coordinating the Mission Support Plan, Air Force Medical Service strategic initiatives and related readiness and health care programs, resources and efforts. He coordinates the Air Force Medical Service efforts among major command surgeons, Army and Navy agencies, Department of Defense Health Affairs, TRICARE Management Activity and the Department of Veterans Affairs.

General Green was commissioned through the Health Professions Scholarship Program and entered active duty in 1978 after completing his Doctorate of Medicine degree at the Medical College of Wisconsin in Milwaukee. He completed residency training in family practice at Eglin Regional Hospital, Eglin AFB, Fla., in 1981, and in aerospace medicine at Brooks AFB, Texas, in 1989. He is board certified in aerospace medicine. An expert in disaster relief operations, he planned and led humanitarian relief efforts in the Philippines after the Baguio earthquake in 1990, and in support of Operation Fiery Vigil following the 1991 eruption of Mount Pinatubo.

General Green has served as commander of three hospitals and Wilford Hall Medical Center. As command surgeon for three major commands, he planned joint medical response for operations Desert Thunder and Desert Fox, and oversaw aeromedical evacuation for operations Enduring Freedom and Iraqi Freedom. Prior to assuming his current position, he served as Assistant Surgeon General for Health Care Operations.

EDUCATION

1974 Bachelor of Science degree in chemistry, University of Wisconsin-Parkside, Kenosha

1978 Doctorate in Medicine and Surgery, Medical College of Wisconsin, Milwaukee
1981 Residency in family practice, Eglin Regional Hospital, Eglin AFB, Fla.
1987 Air Command and Staff College, by seminar
1988 Master's degree in public health, Harvard University, Cambridge, Mass.
1989 Residency in aerospace medicine, Brooks AFB, Texas
2000 Air War College, by correspondence

ASSIGNMENTS
1. June 1978 - July 1981, family practice resident, later, chief resident, Eglin AFB, Fla.
2. July 1981 - August 1984, flight surgeon, U.S. Air Force Hospital, Mather AFB, Calif.
3. August 1984 - September 1985, officer in charge, Family Practice Clinic, Wheeler AFB, Hawaii
4. September 1985 - August 1987, Chief of Clinic Services, Hickam AFB, Hawaii
5. September 1987 - June 1988, student, graduate aerospace medical resident, Harvard University, Cambridge, Mass.
6. June 1988 - July 1989, resident in aerospace medicine, U.S. Air Force School of Aerospace Medicine, Brooks AFB, Texas
7. July 1989 - August 1991, Chief of Aerospace Medicine, and Commander, 657th Tactical Hospital, Clark AB, Philippines
8. September 1991 - August 1993, Commander, 65th Medical Group, Lajes Field, Portugal
9. August 1993 - August 1995, Commander, 366th Medical Group, Mountain Home AFB, Idaho
10. August 1995 - January 1997, Commander, 96th Medical Group, Eglin AFB, Fla.
11. January 1997 - July 1999, Command Surgeon, U. S. Central Command, MacDill AFB, Fla.
12. July 1999 - June 2001, Command Surgeon, North American Defense Command, U.S. Space Command and Air Force Space Command, Peterson AFB, Colo.
13. June 2001 - July 2003, Command Surgeon, U.S. Transportation Command and Headquarters Air Mobility Command, Scott AFB, Ill.
14. July 2003 - July 2005, Commander, 59th Medical Wing, Wilford Hall Medical Center, Lackland AFB, Texas
15. July 2005 - August 2006, Assistant Surgeon General for Health Care Operations, Office of the Surgeon General, Bolling AFB, D.C.
16. August 2006 - present, Deputy Surgeon General, Headquarters U.S. Air Force, Bolling AFB, D.C.

FLIGHT INFORMATION
Rating: Chief flight surgeon
Flight hours: 1,200
Aircraft flown: B-52, C-5, C-9, C-21, C-130, C-141, H-53, KC-135, T-43, F-15, F-16, P-3, T-37, T-38, UH-1 and UH-60

MAJOR AWARDS AND DECORATIONS
Defense Superior Service Medal with oak leaf cluster
Legion of Merit
Defense Meritorious Service Medal
Airman's Medal
Meritorious Service Medal with four oak leaf clusters
Joint Service Commendation Medal
Air Force Commendation Medal with two oak leaf clusters
Air Force Achievement Medal
National Defense Service Medal with bronze star
Armed Forces Expeditionary Medal
Humanitarian Service Medal with bronze star
Philippine Bronze Cross

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS
American Medical Association
American College of Physician Executives

Fellow, Aerospace Medical Association
Fellow, American Academy of Family Physicians
Uniformed Services Academy of Family Physicians
Aerospace Medical Association
Society of U.S. Air Force Flight Surgeons (former President)
Air Force Association
Association of Military Surgeons of the United States

EFFECTIVE DATES OF PROMOTION
Captain June 18, 1978
Major May 26, 1984
Lieutenant Colonel May 25, 1990
Colonel May 31, 1994
Brigadier General Aug. 1, 2001
Major General Sept. 1, 2004

(Current as of March 2009)

Chairwoman Davis, Vice Chairman McIntyre, Ranking Member Wilson, Ranking Member Miller and esteemed members of the Committee, it is my honor and privilege to be here today to talk with you about the Air Force Medical Service. In support of our Air Force priorities, the Air Force Medical Service (AFMS) is on the cutting edge of restorative and preventive care, protecting the health and well-being of our troops everywhere. No where is this more evident than in the field of information technology, an absolutely critical component of our mission success. I am honored to help lead our Air Force team of dedicated professionals in joint efforts with OSD Health Affairs, sister Services and the Department of Veterans Affairs (VA) to address the IT issues confronting us today.

I commend Dr. Casscells, our Assistant Secretary of Defense for Health Affairs, for recently seeking user feedback on AHLTA on the Military Health Service internet site. AHLTA users were asked to submit questions, comments or suggestions that would improve AHLTA, and there were more than 200 replies from the user community. The primary criticisms of AHLTA continue to be speed/performance, reliability, and difficult user interface with an emphasis on poor readability of notes. By contrast, there were multiple references to the VA's VistA electronic health record (EHR), pointing out some of the user-friendly attributes of this system.

Significantly, these issues resulted in low productivity and provider morale. Multiple medical specialty providers, including obstetrics, pediatrics, and ophthalmology, clearly articulated AHLTA did not address the requirements unique to their practice, as AHLTA was primarily designed for general (primary) care. The lack of capability to efficiently capture standard DoD forms, such as physical examinations and Service profiles also hampers daily operations. The current AHLTA version was scheduled for worldwide deployment by the end of

last year, but problems with the initial large scale rollout caused this date to slip. As a result, there have been no substantial functionality improvements in AHLTA in the last four years.

Deployment of EHR systems on DoD networks is complicated by non-standard architecture and changing business processes. DoD network security requirements compound the problem, creating slowdowns and impediments to the efficient operation of a modern EHR. DoD security policies are often implemented differently across Services. Application fixes and patches are required to reach each end-user workstation. Firewalls, routers, non-standard architecture, and security requirements all make software updates difficult to implement. Recent experience at Wright-Patterson Air Force Base rolling out the new AHLTA version highlighted the need for standardized network management and security practices conducive to workflow. The Air Force is making great strides in centralizing and automating network command and control to reduce human error. Stringent but necessary Line of the Air Force implementation of DoD network security requirements often lead to greater restrictions, such as the recent DoD ban on rewriteable media that hampers ability to transfer medical related data (medical photos, retinal images, etc.) from one location to another. Modern EHR systems must adapt to the ever changing security landscape as it adjusts to new and emerging threats.

The Air Force Medical Service has taken a multitude of steps to find viable solutions to these issues and improve speed and reliability. We are moving toward a thin client and application virtualization at a number of Air Force facilities to reduce the requirement for individual session Common Access Card (CAC) log-ins and provide remote access. This has benefitted us in many ways, to include easier log-in routines, faster application speed, increased stability of the application, and reduction in the time and effort of computer support staff in updating and patching AHLTA.

Remote access has improved provider satisfaction with the ability to access patient information from home while on call, or complete patient encounters after duty-hours. Wireless tablets are deployed for use at several sites with the additional speed benefits of a single log-in requirement at the beginning of each duty day along with the advantages of using a pen vs. keyboard to assist with data entry. We funded a comprehensive hardware refresh to ensure each workstation exceeds the baseline memory and processor speed requirements to run AHLTA efficiently. Speech recognition software has been used throughout Air Force clinics for nearly two years, helping providers document many sections of the medical note in a more efficient and timely manner. A recent update to this software has continued to improve speed and accuracy.

In addition to these improvements, we have developed and will deploy two synergistic programs in Air Force clinics: the Family Health Initiative (FHI) and Clinical Optimization for Military Provider AHLTA Satisfaction Strategy (COMPASS). FHI enhances our staffing plan with more support personnel to directly assist clinicians in patient care and improves patient scheduling and access. COMPASS takes full advantage of these enhancements. The COMPASS workflow uses team documentation, teaches simplified coding algorithms, and uses an advanced generation of alternate input method (AIM) forms to reduce time spent writing notes. It also improves note readability and standardizes documentation throughout the clinic. The end result is optimal use of all of the skills of clinicians and support staff while reducing the non-value added time of many clinic functions. Although the COMPASS workflow is still in the preliminary phase of rollout, the initial response of providers and support staff has been very positive.

Resuming worldwide deployment of the latest upgrade of AHLTA is a very high priority for us, as it has many of the provider-requested functional enhancements. This effort has resulted in continued improvement in stability and speed, permitting a limited but successful rollout and the planning of a new deployment schedule. Specialty services are included in this AHLTA upgrade. Obstetrics receives a summary module that gives a single screen comprehensive overview of the obstetric patient. Pediatricians can access a pediatric growth chart that automatically plots height, weight, and head circumference and allows printing. Ophthalmology has a drawing tool which permits a graphical depiction of eye findings. Many other enhancements in functionality have been addressed that will further reduce the time spent in documentation.

We looked closely at the VA's VistA EHR, which was developed to support their business practices. The Air Force and our sister Services continue to partner with the VA in our developmental efforts and lead the nation in sharing healthcare information. VistA, in its current form, is tailored for local or regional healthcare with a generally static population. By contrast, AHLTA was developed to support a global and transient population. We recognize the strengths of VistA and are diligently working toward adding those strengths into AHLTA. Furthermore, VA and MHS representatives, with AFMS participation, are collaborating in an architecture blueprint to bring seamless interoperability between our departments. The new proposed Integrated Regional Distribution Architecture is flexible, scalable, and will allow us to manage data networks much more efficiently to enhance healthcare delivery.

Balancing the non-medical network security requirements and certification process with the unique requirements and capabilities of medical applications and devices has been challenging. We work in collaboration with Air Force Communications to field and maintain

secure systems; however, the processes do not facilitate timely deployment of advanced medical systems. As AHLTA continues to expand in capability, the demand for bandwidth will increase as well, and it is imperative that future network planning take this into consideration.

In closing, Madam Chairwoman, I am intensely proud of the daily accomplishments of the men and women of the United States Air Force Medical Service. As we look ahead, I see a great future for the AFMS, built on a solid foundation of professionalism and strong partnerships. We thank you for your continued support and look forward to working together to improve health care for soldiers, sailors, airmen, marines, their families and all Americans.

Prepared Statement

of

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Assistant Secretary of Defense (Health Affairs)
and
Mr. Charles Campbell
Military Health System, Chief Information Officer
and
Mr. Tommy Morris
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and
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Program Manager, Defense Health Information Management System
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Before the

House Armed Services Committee
Subcommittees on Military Personnel and
Terrorism and Unconventional Threats and Capabilities

March 24, 2009

NOT FOR PUBLIC RELEASE

UNTIL RELEASED BY THE COMMITTEE

Introduction

Chairwoman Davis, Chairman Smith, Ranking Member Wilson, Ranking Member Miller and distinguished members of the Committee, thank you for the opportunity to discuss AHLTA, the electronic health record (EHR) system for the Department of Defense (DoD). This essential technology, which supports uniform, high quality health promotion and healthcare delivery for more than 9.2 million Military Health System (MHS) beneficiaries, is rapidly becoming an integral part of the Nation's health information technology infrastructure.

DoD senior leadership is committed to ensuring provider satisfaction with AHLTA and to resolving issues identified by providers in the healthcare community. Today, we will discuss both the immediate steps we are taking to resolve the most urgent issues and our comprehensive action plan for broad improvements to AHLTA over the next few years.

Madam Chairwoman, Mr. Chairman, as the MHS leadership, we are committed to delivering the business processes and information technology (IT) improvements necessary to ensure that our providers have the tools to deliver and document patient care efficiently and effectively. In 2008, DoD initiated a comprehensive analysis of AHLTA to ensure that the clinical IT needs of providers were being met and began development of an Enterprise Architecture strategy for the DoD electronic health system. The results of our analysis allowed us to develop the strategy that we are here to present.

The Unified Strategy Regional Distribution Approach is a three-phased plan for reshaping our electronic health system. This strategy lays out a nimble, open standards-based approach for meeting current and future interoperability requirements, while also fulfilling the Department's complex security and use-case requirements.

Using the Unified Strategy Regional Distribution Approach, the MHS seeks to improve provider satisfaction, improve reliability, and strengthen data sharing throughout DoD and Department of Veterans Affairs (VA) healthcare delivery continuum and with private healthcare providers. Improvements over this next year will answer urgent provider requests for improved usability, stability and reliability. Over the next two to three years advancements will sustain provider satisfaction and modernize architecture and infrastructure. These modernization approaches allow us to build and field new capabilities within months, not years to integrate new, user-friendly capabilities into AHLTA, and reduce reliance on outdated components that are difficult or expensive to maintain.

In addition, the Unified Strategy Regional Distribution Approach will yield the "blueprint" for the MHS Enterprise Architecture and help us determine how to most effectively achieve current and future objectives from business, application, information and technology perspectives. The "blueprint" is a comprehensive representation of the MHS IT operations that will allow us to proactively manage the entire electronic health system and drive informed decision-making processes based on open standards and industry best practices.

Madam Chairwoman, Mr. Chairman, we believe the Unified Strategy Regional Distribution Approach will increase DoD's capability to support efficient, secure and cost-effective information sharing for use in delivering services required by our Nation's Veterans, Service Members and their families. Through this approach, we will elevate our electronic health system from "intolerable" to "indispensable" in the eyes of our provider community.

Overview: The Unified Strategy Regional Distribution Approach

Stabilizing AHLTA.

The first phase of the Unified Strategy Regional Distribution Approach focuses on improving the AHLTA user experience by stabilizing performance, reliability, and the core infrastructure. The primary objectives of the one- to two-year stabilization phase are: achieving DoD/VA interoperability for the provision of clinical care; playing a significant leadership role in Nationwide Health Information Network (NHIN) pilot projects; and implementing the Enterprise Architecture "blueprint." During the stabilization phase, the Department will also address critical functional gaps and complete preliminary modernization efforts, including the implementation of web services. During this phase we will continue our DoD/VA data sharing initiatives.

Fielding a Comprehensive Electronic Health System.

The second phase of strategy implementation will extend DoD involvement in the NHIN pilot to include incremental interoperability with the private sector and other government agencies beyond VA; field a personal health record solution to empower beneficiaries to manage their own health care; and continue execution of the Enterprise Architecture "blueprint." Improvements in software capabilities, system performance and reliability, and architecture modernization and standardization will further enhance the AHLTA user experience and the care delivery process.

Enhancing the Electronic Health System.

The third phase of strategy implementation will continue expansion of NHIN activities and intensify efforts to achieve comprehensive interoperability. The Department will also extend and enhance the Enterprise Architecture; transition to an open architecture; implement next-

generation capabilities; and provide more robust, open standards-based information sharing. In this and every phase of the Unified Strategy Regional Distribution Approach, the Department will solicit feedback on AHLTA performance from providers and use their input to frame ongoing optimization efforts.

Moving to a Unified Electronic Health System

At the heart of the Unified Strategy Regional Distribution Approach is DoD's migration to a single, logical electronic health system. Using a unified data model, common services, and a unified, Web 2.0-based, customizable graphical user interface (GUI), in conjunction with a service-oriented architecture (SOA), it is now possible to provide a single EHR for patients.

The unified electronic health system will foster full application interoperability and interchangeability, and support both the health mission of providers and the health needs of our Warfighters. The open standard/open architecture technologies employed in the structure will facilitate secure, appropriate, and cost-effective data sharing with DoD, VA and DoD managed care support contractors.

The Department also established a Red Team. The Red Team consists of government technical and functional leaders and Industry Partners including IT leaders from such companies as Intel, Microsoft and GE Medical. The Red Team's Charter is to advise and consult during the Enterprise Architecture Development Process and provide documented feedback on available open standards and industry best practices. The Red Team has reviewed and validated the Unified Strategy Regional Distribution Approach and will continue to provide assessments as we move forward.

Harnessing the Power of Service-Oriented Architecture.

The unified electronic health system will provide major improvements in the capability to exchange data through the use of a service-oriented architecture. Using a service-oriented architecture approach provides methods for development and integration of publish and subscribe services in which functionality is grouped around specific business processes. These processes are then packaged as interoperable services. Using the service-oriented architecture approach, different IT applications can be made interoperable and more efficiently and effectively exchange data.

The service-oriented architecture approach also supports the reuse of code and applications, making rapid development possible, and significantly reducing product delivery time. The end result is the ability to build and field new capabilities within months, not years. MHS has already achieved great success with service oriented architecture, and code and application reuse, in the area of battlefield medical systems, demonstrating the ability to drive down costs and reduce time-to-field from several years to several months. The Theater Medical Data Store, the Medical Situational Awareness in Theater advanced concept technology demonstration, and the Behavioral Health Note capability exemplify the power of a service oriented architecture to support the rapid development and fielding of needed capabilities.

The same MHS IT leaders responsible for the successful development and fielding of these critical theater applications are now leading the MHS Enterprise Architecture and AHLTA efforts.

The Unified Data Model.

Simply put, the unified data model or "schema" identifies data entity types, identifies attributes, applies naming conventions, and identifies relationships among enterprise data. As a

result, the schema standardizes messaging between legacy systems and newer systems. DoD is currently using the model and has shared it with VA. By making the schema available to vendors, future systems will be interoperable with existing systems upon delivery.

Common Services—the Unified IT Service Bus.

The Unified IT Service Bus is a highly secure, robust software infrastructure that can connect information technology resources and combine or reassemble services to satisfy emerging requirements. The Unified IT Service Bus is a universal translator that can allow legacy systems and services to talk with more modern systems and services, simplifying the connection of new applications, legacy applications, application servers, web services, and many other technologies. The Unified IT Service Bus will coordinate interactions among IT resources, manage any incompatibilities between data resources, and generate common services based on activities that can be shared and reused. Development of the Unified IT Service Bus was completed in early February 2009.

Unified Graphical User Interface.

DoD took the best of what VistA had to offer in its user interface and built a cutting edge user-customizable, government-owned, Web 2.0-based interface. This Unified GUI provides a single access to authoritative data sources such as AHLTA and other MHS systems. It was built to also interface with VistA. The Unified GUI was designed to replicate the ease-of-use characteristics of VA's VistA application GUI and to be compatible with AHLTA, VistA and other applications. The prototype was completed in February 2009. The Services, VA and industry representatives have visited our development facility, seen demonstrations and provided their input. Providers were pleased with both the ease of use and the flexibility of the interface

which individual providers can easily modify to present data based on personal preference or medical specialization.

Unified Structure for Regional Distribution.

The Department's plan for modernizing the Clinical Data Repository (CDR) will move the MHS away from manual repository management, provide redundancy, and eliminate multiple single points of failure. These critical changes will support the achievement and sustainment of high quality, fast, and reliable connectivity; enable faster system response times; and eliminate screen refresh delays which can interfere with our providers' clinical workflow.

The Unified Global Health Repository will be regionally distributed but centrally managed. Central management makes it possible to perform maintenance functions without impacting users, and optimizes the use of available bandwidth. The new multipath routing approach the MHS is implementing as part of this structure enables message traffic rerouting based on priority and central network monitoring for quick identification and resolution of issues down to the individual provider's personal work station.

Multipath routing is a way to route data to achieve the agreed-upon quality of service. This allows for continuous connections and reconfiguration around broken paths, until a destination is reached. Because the networked components connect to each other, there are no single points of failure. This type of network is extremely reliable because it is self-correcting, allowing the network to automatically reroute traffic with no manual intervention required if a connection is broken or unreliable.

This Medical Mesh Network for multipath routing is overlaid on the Defense Information Systems Agency infrastructure and used to optimize system performance, eliminating many of the causes of system latency and other performance issues associated with provider satisfaction

with AHLTA. Today, the Defense Information Systems Agency, our network service provider, uses only 10 percent of the available capacity of the network; the other 90 percent is unused. Using this Medical Mesh Network, the MHS can effectively utilize unused capacity to provide the best quality of service for our healthcare providers and Warfighters.

This capability is so effective and powerful that it could serve as a foundation for the Defense Information Systems Agency and potentially for our national health infrastructure. Multipath routing is an example of how the MHS is adopting industry best practices. Hospital Corporation of America, which owns and operates hundreds of hospitals and surgery centers in 20 States and in England, has implemented similar technologies to support its regionalized data repositories. As we move forward with the Medical Mesh Network, we are benchmarking network structure components and engaging the industry "Red Team" in benchmark reviews.

Why Now?

Now is the time for the Unified Strategy Regional Distribution Approach. The MHS business transformation—fueled by the Enterprise Architecture "blueprint"—supports a continuous improvement approach. Further, major technological, open standards and architecture advances support a unified electronic health system approach that fulfills interoperability goals without jeopardizing DoD's information assurance posture.

Enterprise Architecture "Blueprint" to Drive Business Transformation.

The Unified Strategy Regional Distribution Approach completely changes our business approach to developing and sustaining the family of systems supporting DoD's healthcare mission. This family includes systems designed to meet DoD-specific requirements for clinical management, medical logistics, resource management, in-transit visibility, Warfighter support, decision support, and research and development activities.

The Unified Strategy Regional Distribution Approach provides for DoD's complex security and capability needs, and leverages open standards-based advanced technologies, achieving interoperability goals more quickly, less expensively, and among a much broader set of applications and care provider communities.

The Unified Strategy Regional Distribution Approach is transforming the role of the federal government in the outsourcing paradigm—from the government acting as a customer reliant on external engineering expertise to the government acting as the lead integrator, defining the national standards and industry best practices to which vendor deliverables must adhere. This shift gives the government the tools it needs to manage and continuously monitor vendors to ensure that they deliver products at the expected cost that meet user needs and are easily integrated into the electronic health system without expensive customization.

The Enterprise Architecture "blueprint," to be completed this month, will be used to inform every aspect of business transformation at the core of the Unified Strategy Regional Distribution Approach. The "blueprint" reflects MHS business processes, governance and standards; the interactions among those processes, governance and standards; organizational operations information; and the hardware, software and networks MHS uses. MHS leaders will use the "blueprint" to improve decision making, facilitate the ability to adapt to changes in requirements, optimize the use of assets, eliminate processes that are redundant or inefficient, and significantly improve user satisfaction.

Enterprise Architecture "Blueprint" to Strengthen Improvements in Outsourcing Management.

The business transformation underway within MHS targets the shortfalls of past managerial processes and provides the government with the necessary tools to reduce costs and dramatically improve the quality of product delivered through outsourcing activities, including the adoption of open standards and industry best practices to help maximize the federal return on investment. Because information technology is constantly evolving, MHS is adopting the best practices of the IT Infrastructure Library. The IT Infrastructure Library contains best practices that are current and practical, combining sound guidance with the latest thinking from public and private sector experts in the IT community.

Unified Electronic Health System Fulfills Unique, Complex Requirements of DoD Healthcare Information Support for the Warfighter Mission.

For DoD, a significant ongoing challenge with interoperability is the complex set of requirements that must be fulfilled. These include the critical requirement for operations security to prevent an adversary from accessing and exploiting information held in our systems. DoD's electronic health system is complex in its requirement to support the capture and transmission of operational information. Unauthorized access to medical situation awareness information held in systems for Command and Control, Force Health Protection, and Medical Readiness, could provide information on troop strength, location and other details that might pose a threat to Service Members, operations and activities.

Other DoD security requirements, which exceed those of other electronic health systems, include the need for detailed audit trails, the use of the Secret Internet Protocol Router (SIPR) for transmission of classified information, and the ability to fulfill the requirements of DoD's

Information Assurance Posture. All of these requirements support DoD's capability to collect, process, and disseminate an uninterrupted flow of information while denying an adversary's ability to gain access to this information.

DoD systems also must address the challenges posed by complex care delivery scenarios that include a highly mobile healthcare team and patient population that operate in austere environments including theater and shipboard operations, and in-transit scenarios such as medical and aeromedical evacuation.

The Unified Strategy Regional Distribution Approach addresses each of the above constraints. The robust security inherent in the IT Service Bus and other components of the single logical electronic health system, including those components previously developed, fulfill these unique requirements.

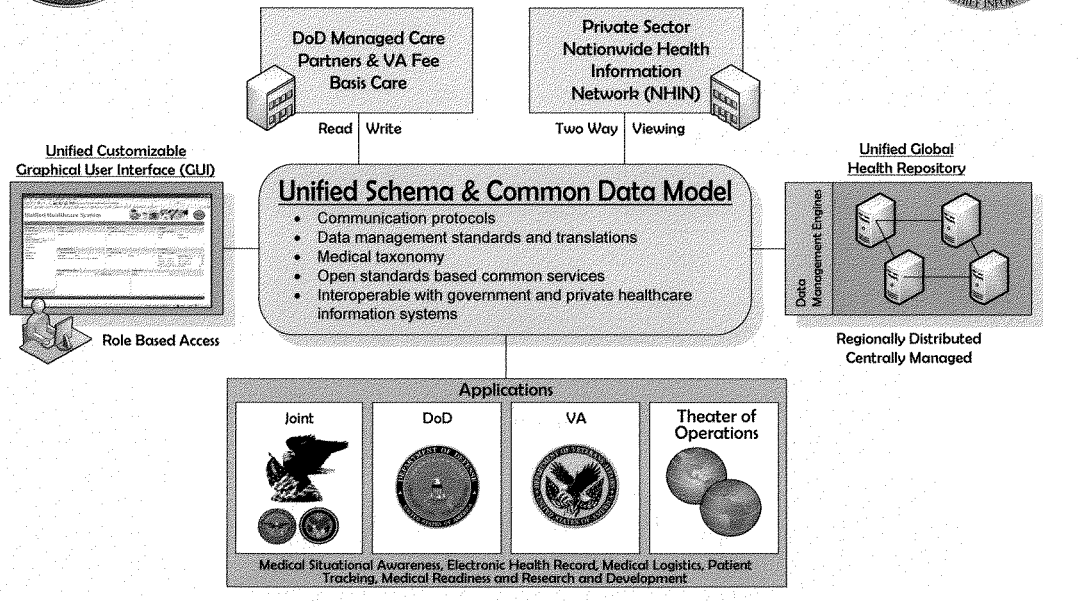
CONCLUSION

Madam Chairwoman, Mr. Chairman, the Department appreciates the insights, recommendations, and guidance of the Committee members and the Service representatives in attendance today. We share a common goal to provide the highest quality care to our Nation's service members and their families. Implementing the Unified Strategy Regional Distribution Approach and making the unified electronic health system a reality, will provide transparent management of and access to inpatient, outpatient, and battlefield health records; enable the effective reuse of the best available software components; meet the goal of using open standards to achieve interoperability; and establish an Enterprise Architecture to achieve and sustain long term provider satisfaction and support efficient, effective delivery of care to our beneficiaries.

We look forward to keeping you apprised of our progress as we move forward with the Unified Strategy Regional Distribution Approach. Thank you again for allowing us the

opportunity to appear before you to discuss the "Way Ahead" for DoD's Electronic Health System.

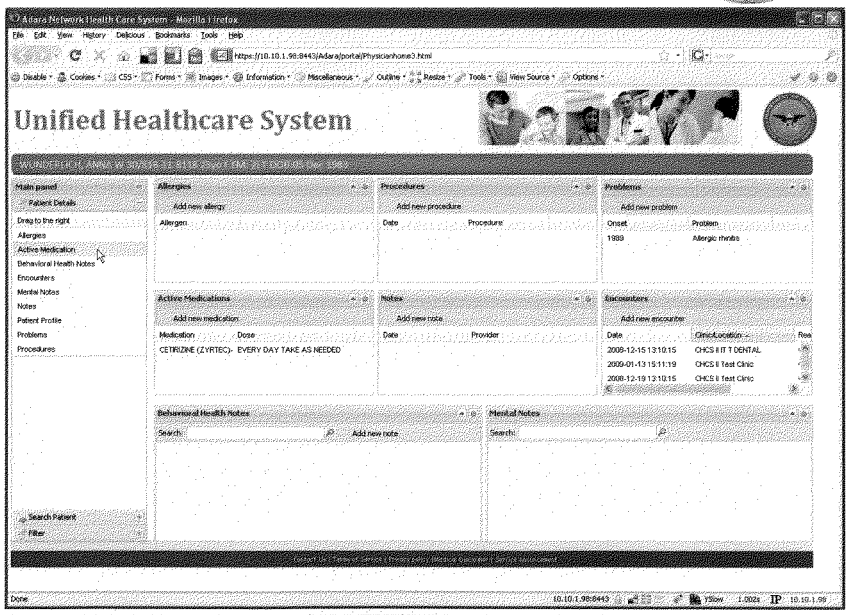
Unified Strategy, Regional Distribution Approach



Innovate ★ ★ Partner ★ ★ ★ ★ ★ ★ ★ ★ ★ Deliver ★ ★ Learn 1

Unified Graphical User Interface (GUI)

Based on the VistA GUI, the Unified GUI will enable access to all back-end functionalities in AHLTA or VistA



Continuous Vendor Monitoring and Evaluation

Evaluation is done pre-, during, and post-; this is part of creating a new methodology in procurement and governance

TAB	Table of Contents
Cover and TOC	Cover Sheet and Table of Contents by Tab
Vendor Analysis - Procurement	Aggregated data regarding procurement data points from the evaluation of vendor proposals by the individ
Vendor Analysis - Ongoing	Aggregated data regarding ongoing maintenance data points from the evaluation of vendor proposals by th members.
New Vendor Analysis (If Applicable)	Additional review required for new Vendors
Analysis Q&A	Worksheet for Vendor Q&A for specific requirements not addressed on general Vendor Analysis
Vendor 1	Evaluation of vendor proposal by an individual team member
Vendor 2	Evaluation of vendor proposal by an individual team member
Vendor 3	Evaluation of vendor proposal by an individual team member
Vendor 4	Evaluation of vendor proposal by an individual team member
Vendor 5	Evaluation of vendor proposal by an individual team member.
Presentation Summary	Aggregated data from the evaluation of vendor proposals by the individual team members.
V1 Pres	Evaluation of vendor presentation by an individual team member.
V2	

Vendor Analysis - Ongoing

Project Title	Project title here	ID	Contract identifier here
Project manager	Project manager name here	Sponsor	Sponsor name here
		Updated	Date of update here

ID	Description	Weight		Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5
1	Support Costs	35		0	0	0	0	0
2	Timeliness of Delivery	20		0	0	0	0	0
3	Strength of Support	20		0	0	0	0	0
4	Interoperability with Other Solutions	15		0	0	0	0	0

Evaluations are quantified and include operational, financial, efficiency and value metrics

Vendor 1 Evaluation Grid

Project	Project title here	ID	
Project manager	Project manager name here	Sponsor	
		Updated	
VENDOR DETAILS	Enter name here		
Type of Vendor			V
Type of Environment			E
Volume (No. of Seats)			A

Project Title	Project title here	ID	Contract identifier here
Project manager	Project manager name here	Sponsor	Sponsor name here
		Updated	Date of update here

ID	Description	Weight	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Comments
1	Performance	35	0	0	0	0	0	
2	Price	25	0	0	0	0	0	
3	Price to Performance Ratio	15	0	0	0	0	0	
4	Feature Set / Functionality	10	0	0	0	0	0	
5	Relevance to Required Solution	10	0	0	0	0	0	
6	Timeliness of Delivery	5	0	0	0	0	0	

RECORD VERSION

STATEMENT BY

MR. TIMOTHY J. HARP

DEPUTY ASSISTANT SECRETARY OF DEFENSE,

FOR COMMAND, CONTROL, AND COMMUNICATIONS,

INTELLIGENCE, SURVEILLANCE, RECONNASSIANCE

AND INFORMATION TECHNOLOGY ACQUISITION

BEFORE THE

U.S. HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON MILITARY PERSONNEL

AND THE

TERRORISM, UNCONVENTIONAL THREATS & CAPABILITIES

March 24, 2009

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
COMMITTEE ON ARMED SERVICES

INTRODUCTION

Good morning Chairwoman Davis, Chairman Smith, Mr. Wilson, Mr. Miller, and Members of the Subcommittees. Thank you for this opportunity to testify before the Subcommittees on Military Personnel and on Terrorism, Unconventional Threats and Capabilities on the acquisition oversight of TRICARE Management Activity's (TMA) two Major Automated Information Systems (MAIS): Armed Forces Health Longitudinal Technology Application (AHLTA) and Theater Medical Information System - Joint (TMIP-J). I am the Deputy Assistant Secretary of Defense for Command, Control, Communications, Intelligence, Surveillance, Reconnaissance and Information Technology Acquisition (C3ISR & IT Acquisition) within the Office of the Assistant Secretary of Defense for Networks and Information Integration. I am here today representing Mr. John Grimes, the Assistant Secretary of Defense for Networks and Information Integration/Department of Defense Chief Information Officer, or ASD(NII)/DoD CIO. I provide acquisition oversight for Mr. Grimes on major defense acquisition programs and major automated information systems programs on programs delegated to the ASD(NII)/DoD CIO by the Under Secretary of Defense for Acquisition, Technology and Logistics.

The ASD(NII)/DoD CIO, for whom I work, is the Milestone Decision Authority (MDA) for both AHLTA and TMIP-J. The ASD(NII)/DoD CIO's primary responsibility as the MDA is to make decisions on whether a MAIS

should be initiated and whether that program should proceed into the various phases of the acquisition life cycle. At each major decision point, the MDA must determine whether the program or a key increment of the program should be terminated, modified or approved to proceed. A key part of this responsibility is determining whether the program is complying with the Department's acquisition policies documented in the DoD 5000 series and the requirements of the subtitle III of U.S.C. title 40 (formerly called the Clinger-Cohen Act).

The ASD(NII)/DoD CIO carries out these responsibilities with the advice and assistance of other oversight officials in the Office of Secretary of Defense (OSD), the Joint Staff and in the DoD Component responsible for acquiring the system. Among the most important of these is the Assistant Secretary of Defense for Health Affairs (ASD(HA)) who is the Principal Staff Assistant or functional sponsor for the AHLTA and TMIP-J program. He is responsible for determining and approving the needs and requirements for the program and for establishing the mission-related performance outcomes that the program is intended to achieve. The ASD(HA) also serves as the Director, TRICARE Management Activity (TMA) who functions as the Component Acquisition Executive (CAE). The Military Health System CIO and the Program Executive Officer Joint Information Management Systems are also key oversight officials, as they are closest to the program, oversee the day-to-day actions of the program manager and are primarily responsible for ensuring that the program is compliant with the Department's

acquisition and IT policies and regulations. These individuals and a number of other OSD and Joint Staff officials comprise a team that advises the ASD(NII)/DoD CIO as to whether a program should be terminated, modified, or approved to proceed.

Acquiring automated information systems without a production component is significantly different from acquiring a weapons system. For weapons systems we concentrate on key risk areas like technology maturity and producing large numbers of custom hardware in economic quantities. In contrast for automated information systems we concentrate reducing risk in areas like process reengineering, enterprise architectures, information assurance, and integration of multiple commercial off-the-shelf applications. The challenges of information technology acquisition is being addressed by a Defense Science Board study directed in the fiscal year 2008 National Defense Authorization Act that should be released shortly. I believe this report will recommend changes to our acquisition processes that will result in new capabilities being acquired sooner and at less cost than under the current DoD 5000 series.

CONCLUSION

This concludes my prepared remarks addressing the topics you asked me to focus on. Again, thank you for the opportunity to testify. I am prepared to entertain any questions you might have

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

MARCH 24, 2009

RESPONSE TO QUESTION SUBMITTED BY MRS. DAVIS

Mr. MORRIS. A list of the industry and government entities currently represented on the Red Team follows:

Industry Advisory Panel (IAP) Members from the Following Organizations:

3M Company
ADARA Networks, Inc.
Akimeka, LLC
Booz Allen Hamilton Inc.
Carmen Group Inc.
Dell Inc.
GE Healthcare (a unit of General Electric Company)
Harris Corporation
Hewlett-Packard Development Company, L.P.
Intel Corporation
International Business Machines Corp. (IBM)
Lockheed Martin Corporation
Microsoft Corporation
Northrop Grumman Corporation
Oracle Corporation
Parsons Institute for Information Mapping
Science Applications International Corporation (SAIC)
Vangent, Inc.
VMware, Inc.

Government Technical Leaders from the Following Organizations:

Military Health System Enterprise Architecture
U.S. Air Force Medical Chief Information Officer
U.S. Army Medical Chief Information Officer
U.S. Combatant Commands
U.S. Defense Information Systems Agency
U.S. Department of Defense, Assistant Secretary of Defense for Networks and Information Integration
U.S. Department of Defense, Chief Information Officer
U.S. Department of Veterans Affairs
U.S. Joint Chiefs of Staff, Joint Staff
U.S. Navy Medical Chief Information Officer

Government Functional Leaders from the Following Organizations:

Deputy Assistant Secretary of Defense for Clinical and Program Policy
Deputy Assistant Secretary of Defense for Force Health Protection and Readiness
Deputy Assistant Secretary of Defense for Health Budgets and Financial Policy
Principal Deputy Assistant Secretary of Defense for Health Affairs
U.S. Air Force Chief Medical Information Officer
U.S. Army Chief Medical Information Officer
U.S. Combatant Commands
U.S. Department of Homeland Security
U.S. Department of Veterans Affairs
U.S. Navy Chief Medical Information Officer

In addition to the stated membership, the Red Team is expected to include government functional and technical leaders from the U.S. Marine Corps. [See page 33.]

RESPONSES TO QUESTIONS SUBMITTED BY MR. CONAWAY

Admiral CULLISON. Our provider force is 33,702 on Active Duty, 9,671 contractors and 13,080 civilians for a total of 56,453.

The patient numbers are 1.82 million in the Navy Medicine MTF catchment area with 331,890 Navy and 201,268 Marine Corps Active Duty. [See page 24.]

General GREEN. The Air Force Medical Service has a total of 42,842 active duty and enlisted members. Of that number, 7,512 are civilians. The provider staff is comprised of about 5,963 active duty officers and civilians. [See page 24.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MARCH 24, 2009

QUESTIONS SUBMITTED BY MRS. DAVIS

Mrs. DAVIS. A comprehensive and detailed plan, to include timelines and budgets, to implement the fixes to the Department of Defense's Health Information Technology Systems described by Dr. Casscells, Mr. Campbell, Mr. Morris, and COL Hines during the hearing.

Dr. CASSCELLS. By the end of June 2009, the Office of the Assistant Secretary of Defense (Health Affairs) will meet with House Armed Services Committee staff and provide a comprehensive and detailed plan, to include timelines and budgets, for implementing fixes to the Department of Defense's Health Information Technology Systems.

Mrs. DAVIS. An account of the number of meetings held by the "Red Team" described by Mr. Morris during the hearing, to include the dates and participants (and their organizational affiliation) at each event.

Mr. MORRIS. The Red Team serves as an ongoing forum of discussion. Thus far, meetings have occurred on December 5, 2008, January 29, 2009, and March 11, 2009. The next meeting is scheduled for March 26, 2009. In addition to technical and functional leaders from the Government and Services, the Red Team includes an Industry Advisory Panel. The attendance record for Industry Advisory Panel Members follows:

INDUSTRY ADVISORY PANEL MEMBERS	12/5/2008	1/29/2009	3/11/2009
3M Company		✔	✔
ADARA Networks, Inc.	✔	✔	✔
Akimeka, LLC	✔	✔	✔
Booz Allen Hamilton Inc.	✔	✔	✔
Carmen Group Inc.		✔	✔
Dell Inc.	✔	✔	✔
GE Healthcare (a unit of General Electric Company)	✔	✔	✔
Harris Corporation	✔	✔	✔
Hewlett-Packard Development Company, L.P.	✔	✔	✔
Intel Corporation	✔	✔	
International Business Machines Corp. (IBM)	✔	✔	✔
Lockheed Martin Corporation	✔	✔	✔
Microsoft Corporation	✔	✔	✔
Northrop Grumman Corporation		✔	✔
Oracle Corporation	✔	✔	✔
Parsons Institute for Information Mapping	✔	✔	✔
Science Applications International Corporation (SAIC)	✔	✔	✔
Vangent, Inc.		✔	✔
VMware, Inc.			

QUESTIONS SUBMITTED BY MR. SMITH

Mr. SMITH. Mr. Morris, one of the unfortunate truths of hearings is that you often have to sit there and answer for the sins of those that came before you. I don't want to dwell on the past, but if memory serves, part of the post-mortem of the birth of AHLTA faulted the way the design and implementation of the system was handled by one company. What is your proposed acquisition strategy for moving forward? How much of the work will be done in-house by the Government, and how much by an outside contractor or contractors? What are the relative strengths and weaknesses of the in-house government team versus the available contractor pool? Do you plan to use a contractor as a lead systems integrator to coordinate all of the pieces?

Mr. MORRIS. The new way ahead will enable the Military Health System (MHS) to make maximum use of a maturing, competitive marketplace. The MHS will leverage input from industry leaders to select a vendor with the experience and resources necessary to integrate multiple technical components, including both commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) products. When AHLTA was designed more than 10 years ago, the Internet was immature, health information technology was emerging, and there were few COTS vendors to choose from or model after. Today, the market is rich with industry-leading products, which will be considered as this initiative moves forward. To date, no commercial vendor provides an electronic health record (EHR) comparable in scale to the MHS that meets the requirements of a diverse environment of transient healthcare teams and transient healthcare populations and operates in austere environments such as war zones or on ships.

The Defense Health Information Management System acquisition team is comprised of Government and contractor Department of Defense acquisition certified professionals with a critical balance of clinical, management, and technical talent and experience. The team has successfully delivered mission-impact products worldwide, such as:

AHLTA	Outpatient documentation capability	Worldwide deployment complete December 2006
AHLTA Release 3.3	Implements provider-requested enhancements	Worldwide deployment underway
AHLTA Dental	Implements dental EHR charting and documentation	Worldwide deployment underway
Essentris	Inpatient EHR charting and documentation	Worldwide deployment underway
AHLTA–Theater	Collects outpatient EHR information	Deployment complete
TMIP Composite Healthcare System Cache (TC2)	Inpatient EHR charting and documentation in theater environment	Deployment complete
AHLTA-Mobile	First Responder/Field Medical Card	Deployment complete
Joint Medical Work Station (JMeWS)	Command and Control/Medical Surveillance	Deployment complete
Theater Medical Data Store (TMDS)	Theater encounter repository (inpatient and outpatient) and patient tracking and movement status	Deployment complete

Mr. SMITH. Mr. Campbell, it is my understanding that far too often due to AHLTA's slow operation time, health care professionals merely scan in a paper health record into the notes section of a patient's record rather than entering in the record properly. While this "shortcut" may save the healthcare professional time, it renders the benefits of an electronic health record useless. One of the original benefits of AHLTA was the ability to track health trends through data collection as well as have a comprehensive health record for patients. With that in mind, what steps will the Department of Defense (DoD) take to ensure that AHLTA is user friendly

and minimize the time it takes for providers to enter records while also ensuring that improperly scanned records are corrected and saved in the proper manner?

Mr. CAMPBELL. The Military Health System (MHS) is working successfully with the Army, Navy, and Air Force to improve the medical encounter documentation process. Together, AHLTA enhancements, Service-led AHLTA training efforts, AHLTA user conferences, and efforts by AHLTA Clinical Champions have helped improve the overall encounter documentation process. Training efforts focus on expanding the use of AHLTA "shortcuts" and using structured text for appropriate data capture while completing clinical notes. These shortcuts implement provider-developed data entry templates that help streamline the encounter documentation process. AHLTA also allows healthcare providers to scan clinical information that does not exist electronically, to ensure that relevant clinical information is captured. AHLTA is designed to allow multiple forms of documentation, including scanning. All forms of documentation ensure the capture of pertinent electronic data to support force health protection and readiness.

Responding to requests from clinicians, the MHS continues to modernize AHLTA with performance enhancements, functional improvements, and added capabilities. For example, DoD is working to operationalize a new unified graphical user interface (GUI) that will be customizable by the user. The new GUI will be more intuitive and easier for clinicians to use, and will work on top of AHLTA.

In the future, DoD will implement a document scanning and imaging capability to enable healthcare providers to "attach" additional sources of relevant clinical information to a patient's clinical encounter information. This capability is intended to expand and enhance the patient electronic health record.

Mr. SMITH. Mr. Campbell, while a central server to store all electronic health records makes sense due to the global position, structure, and needs of the Department of Defense (DoD), network delays, server problems, and other technical glitches often result in changes to a patient's electronic record being lost. While I understand the Department is developing an improved health information technology system as a successor to AHLTA, lost updates of critical information records in the meantime remains unacceptable. What steps is the Department taking to mitigate this problem until a successor can be implemented?

Mr. CAMPBELL. DoD is committed to ensuring that AHLTA, one of world's largest operating electronic health records, delivers premier healthcare support capabilities to the military. AHLTA's current capabilities include secure, 24/7, worldwide online access to patients' comprehensive medical records. Initiatives of this scope and complexity are challenging, not only for DoD, but also for peer-level, large-scale healthcare organizations. DoD continually focuses on improving the performance, operational availability, and usability of AHLTA.

The Military Health System will execute key system adjustments by the end of June 2009 that will improve central server availability and reduce technical problems. The adjustments will:

- Optimize database memory
- Improve software efficiency for data queries
- Streamline the search process for healthcare data
- Improve response times for providers
- Upgrade database software to make use of commercial products

These efforts will contribute significantly to stabilizing AHLTA during this transition period, as DoD continues its commitment to delivering premier healthcare support capabilities to the military.

QUESTIONS SUBMITTED BY MR. WILSON

Mr. WILSON. Two of the largest challenges to DOD are the difficulty doctors have in using AHLTA, and the reliability of the system. The VA solved their usability issues by building the Computerized Patient Record System (CPRS) which leverages their core VistA technology. a. Given that the DOD's Composite Healthcare System was originally based on VistA, why do you believe the DOD not considered a similar approach?

General SCHOOMAKER. The Department of Defense's (DoD) Composite Health Care System (CHCS) was initially based on the core VistA technology, but it was modified to support the DoD mission. Following the Persian Gulf War in 1992 and partly in reaction to Gulf War Syndrome, Congress directed the DoD to build a system that would link battlefield injuries and illnesses to symptoms and diagnoses. The Department determined a user interface with defined and specific structured

documentation (computable data) was required to achieve this capability. VistA is not designed to capture structured, computable texts in the history and physical exam portion of the medical record. VistA systems are considered more user-friendly because of its simple user interface, which allows mostly free text input and local customization to better meet providers' preferences. Additionally, VistA system users enjoy better speed based on proximity to hundreds of local repositories supporting a mostly static beneficiary population. DoD's electronic health record system by contrast, uses a single central data repository to allow universal access for a highly mobile and global population. A single repository also gives DoD significant advantages for data mining and assessing population health, two important requirements for military medicine. In short, each system was built to meet the unique needs of its population and both systems face its own set of challenges.

Mr. WILSON. The Department of Defense (DoD) has been building AHLTA for over ten years at a cost of billions and it is clearly not now an acceptable system. Please explain why the recent attempt at overhauling the system does not have a professional healthcare information technology design company as the lead. Please also describe why the decision was made not to proceed in cooperation or consultation with such a healthcare information technology design company.

Dr. CASSCELLS and Mr. MORRIS. DoD's electronic health record (EHR) serves as one of the world's largest clinical information systems. The EHR provides secure, 24/7, worldwide online access to patients' medical records, a key enabler of military medical readiness. AHLTA ensures healthcare providers have ready access to medical information when and where needed to support the military's highly mobile patient population by storing data in a central location. As military members move from location to location, AHLTA is readily available to support their healthcare needs. Across the enterprise, AHLTA supports uniform, high-quality health promotion and healthcare delivery to Military Health System (MHS) beneficiaries. We are confident that the EHR "way ahead" strategy—upgrading the overarching architecture and application support—will meet current requirements for military healthcare support services and provide a platform for incorporating advances in technology and meeting evolving requirements.

Key features of this very successful program include:

- 77,000 active users in fixed and deployed medical facilities, and onboard ships
- AHLTA currently contains 50 terabytes of clinical data on MHS beneficiaries
- AHLTA use continues to grow at a significant pace—as of March 20, 2009, AHLTA has processed and stored over 104 million outpatient encounters
- On average, AHLTA processes over 133,000 encounters per workday
- As of February 28, 2009, 2,161,292 outpatient clinical encounters have been documented in AHLTA-Theater (currently deployed in Iraq, Afghanistan, and Kuwait) and captured in Service members' lifetime EHRs
- Theater outpatient and inpatient data are available to DoD through AHLTA
- Theater outpatient and inpatient data are available to the Department of Veterans Affairs

The EHR "way ahead" strategy will be accomplished through strategic outsourcing to market leaders who can provide specialized industry leading capabilities, maximizing the use of commercial off-the-shelf products. This approach was determined leveraging information and analysis performed by current MHS information technology vendors. This approach was recommended by world-leading information technology companies as part of the Red Team process. Red Team industry participants include Hewlett Packard, Intel, Microsoft, and Oracle.

Mr. WILSON. Booz Allen Hamilton has recently reported that the requirements in both the Department of Defense (DoD) and the Department of Veterans Affairs (VA) for a common electronic health record (EHR) were about a 96% match. Given the demonstrated success of VistA in both patient care and provider acceptance, is it your opinion that DoD should adopt a similar approach? Please explain why DoD should or should not elect to go with either (1) the proven success of Government-owned VistA or (2) a successful commercial off-the-shelf (COTS) electronic health record. Please also answer whether or not DoD is looking into building yet another EHR from scratch.

Dr. CASSCELLS and Mr. MORRIS. DoD and VA have adopted Booz Allen Hamilton's recommendation for DoD and VA to pursue a common services strategy. DoD currently uses a COTS inpatient documentation product in DoD inpatient facilities that have more than 40% of DoD's inpatient beds. DoD plans to continue worldwide implementation of a COTS inpatient documentation solution during Fiscal Year (FY) 2009 and anticipates supporting over 90% of DoD's cumulative inpatient beds by the

Second Quarter, FY 2010. Additionally, the VA has access to discharge summaries from these facilities using the Bidirectional Health Information Exchange.

Mr. WILSON. The Department of Defense (DoD) is said to be focusing on "open source" software as the solution, however, open source software, by its nature, requires more work to implement and self support over time because there is not a responsible supplier. Isn't an open source approach contrary to the principle of using proven, available commercial off-the-shelf (COTS) solutions that embrace open standards, but yet provide a supported and tested solution?

Dr. CASSCELLS and Mr. MORRIS. DoD's electronic health record (EHR) "way ahead" plan leverages an open standards, open architecture approach. This approach will enable DoD to benefit from multiple industry-leading EHR products in a more cost effective and timely manner. Proven successful COTS products have and will be "connected" in a "plug and play" manner to improve EHR and data sharing capabilities.

Mr. WILSON. The Department of Defense (DoD) seems to be focused on building technology and not on providing better healthcare with tools that simplify and improve its delivery. Please describe the process currently in place to capture user and patient feedback, and describe how that input is implemented in the process of developing a better system at DoD. Please explain why it would not be a better approach to adopt a commercially available system, currently employed in the private sector, which can be incrementally improved over time?

Mr. MORRIS. The Military Health System (MHS) electronic health record (EHR) leverages both commercial off-the-shelf and government off-the-shelf applications that meet DoD's multiple unique mission requirements. DoD must support combat operations in austere environments and ensure that healthcare providers have ready access to medical information when and where needed to support the military's highly mobile patient population. As military members move between locations, the EHR is available to support their healthcare needs.

The MHS continues to support forums and venues that gather healthcare provider feedback to improve the operations and capabilities of the MHS EHR; for example:

- MHS provides a website to gather user feedback from healthcare providers
- Annual user conferences provide a synergistic environment for users to exchange ideas and showcase efficiencies in the practical use of the EHR
- MHS supports regular meetings with Service functional communities and daily conferences
- A formal system change request process enables users to submit suggestions for changes
- A three-tiered Help Desk captures suggested changes
- During 2008, the MHS Chief Information Officer visited 12 large military treatment facilities to speak with leadership and clinicians and gain firsthand feedback

User feedback has led to three application upgrades within AHLTA Release 3.3, which is now being deployed worldwide. Five additional application upgrades are planned by June 2009.

The latest release of AHLTA 3.3 improves provider encounter and document workflow processes based on user-requested capabilities and lessons learned from Block 1 deployment. Key features include:

- Automated clinical practice guidelines
- Performance enhancements to speed up the clinical encounter documentation process
- Electronic signature capabilities, allowing patients to sign forms such as consent forms
- Health assessment management tools development, providing enhancements to health history modules so patients can use web-based capabilities to report patient history information
- Multi-site user account access, giving mobile providers access from multiple locations

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