HEALTH INFORMATION TECHNOLOGY: IMPROVING QUALITY AND VALUE OF PATIENT CARE

HEARING

BEFORE THE

SUBCOMMITTEE ON HEALTH

OF THE

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HOUSE OF REPRESENTATIVES

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HEALTH INFORMATION TECHNOLOGY: IMPROVING QUALITY AND VALUE OF PATIENT CARE

THURSDAY, JULY 22, 2004

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON HEALTH,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m., in room 2322, Rayburn House Office Building, Hon. Michael Bilirakis (chairman) presiding.

Members present: Representatives Bilirakis, Hall, Shimkus, Wilson, Shadegg, Buyer, Barton (ex officio), Eshoo, Stupak, Green, Capps, and Rush.

Staff present: Chuck Clapton, majority counsel; Nandan Kenkeremath, majority counsel; Bill O'Brien, projects assistant; Eugenia Edwards, legislative clerk; Amy Hall, minority counsel; Bridgett Taylor, minority professional staff; and Purvee Kempf, minority professional staff.

Mr. BILIRAKIS. Good afternoon. The hearing will now come to order. Today's hearing will provide the subcommittee with an opportunity to learn more about the issues surrounding health information technology and to hear about the administration's new strategic information technology framework, which was released yesterday.

We will also have a chance to better understand the potential that health information technology holds for improving America's health care system by reducing medical errors and improving the quality and cost of health care. The witnesses we have before us today will also be able to discuss the barriers that have slowed the adoption of this technology by hospitals, doctors and other health care providers.

I would like to first thank the Secretary of the Department of HHS, Mr. Tommy Thompson, who will discuss the framework for health information technology, and I also know that if you have a cause, it's usually going to find its way up toward the top. I applaud all of your efforts in this area.

Since you became Secretary, I know that promoting the adoption of the health information technologies will provide a framework for allowing information technology in the health business processes across the Federal Government. And, again, I thank you for coming and look forward to your testimony.

Developing health information technology just makes sense. The health care industry has been dragging its feet in this area, and it is progressing much slower than other sectors of the economy. I was pleased that the Medicare Prescription Drug and Modernization Act, MMA, enacted last year included a provision that required HHS to adopt final prescribing standards by 2008. Additionally, MMA provides for grants to physician offices to enable the purchase of need prescribing systems. While these are good first steps, there is so much more that needs to be done.

I look forward to hearing from the rest of our witnesses as well. We have two panels of experts in the field of health information technology, and I certainly appreciate all of the witnesses sharing their insights with us this afternoon. Thanks for being here, and I would now yield to Mr. Stupak from the upper peninsula of Michigan. I had the real pleasure of getting to see that area this past weekend and it is paradise in the summer. And he is serving as ranking member of this subcommittee. Mr. Stupak, please proceed.

Mr. STUPAK. Thank you, Mr. Chairman, and you should come back in January or February. It is lovely then.

Mr. Chairman, thank you for calling this hearing today to discuss one of the most important ways we can lower the cost of health care, improve quality and reduce errors: Expanding the use of health care information technology. Mr. Secretary, it is always good to see you before the committee, and I would like to thank all the other panelists who will be testifying here today.

It is clear that we are behind the curve in what needs to be done when we talk about telecommunications and telemedicine. More than 90 percent of the about 30 million health care transactions each year in the United States are still conducted on paper, phone or fax. Fewer than 20 percent of U.S. primary doctors use electronic medical records. Patients are still paying billions more every year than they should. The administration estimates we can save $140 billion annually with upgrade.

Industry says we can save even more. The CEO of Cisco says we can cut health care costs by 25 percent. We could also save thousands of more lives. The Institute of Medicine has called the development of electronic health records and other IT advances essential to reducing the number of medical errors. The Center for Information Technology Leadership found that more than 2 million adverse drug events could be prevented each year using IT and over 190,000 hospitalizations could be prevented each year.

There is study after study about the benefits of health care IT. We need to get moving. We have an entire baby boomer generation increasingly using our health care system. We need real investments yesterday, not tomorrow. I look forward to hearing the details of the President's strategic plan announced yesterday, and I am glad the administration is talking about this. The Press Releases, task forces, and strategic plans won't mean a whole lot unless they are backed up with real funding and real incentives to implement upgrades.

The President proposed $50 million in grants to hospitals in 2004, and he proposed $50 million in grants to States in 2005. One hundred million over 2 years is not going to cut it. The State of

Massachusetts alone needed more than $100 million to implement just electronic prescribing technology Statewide. The Mayo Clinic spent over $100 million in 1 year on IT upgrades. We need to also give incentives to providers who use IT. Technology doesn't do a lot of good if it isn't used. We should give providers of Medicare payment increases if they use health care IT.

Finally, when we talk about health care technology, it is important that we recognize the special challenges and circumstances faced by rural providers. An urban-centric program is not going to work in rural America. Rural providers do not have the resources big health care systems have, and they may not be able to move as quickly or easily to implement IT. And, frankly, I am more than a little concerned that rural providers will be left behind.

The administration's track record with one type of health IT, telemedicine, tells me I should be concerned. The administration's 2005 budget contains only $4 million for rural telemedicine grants programs. In addition, Medicare's reimbursement for telehealth is extremely limited to only a few providers for only a few procedures. As you know, rural providers care for more Medicare beneficiaries than their counterparts. HHS has said that rural providers aren't interested in real health; but it is not a matter of interest, it is a matter of affordability.

Telemedicine isn't the only area where rural providers have concerns. The quality improvement organizations are supposed to help providers implement IT upgrades to help improve the quality of health care provided. But what we have found is that the quality improvement organizations don't work well, if at all, with smaller facilities. I am concerned that any health IT initiative could again leave rural providers behind. We need to make sure that doesn't happen.

And with that, Mr. Chairman, I guess I have a minute left, I will yield back the balance of my time.

Mr. BILIRAKIS. The Chair thanks the gentleman. Gentlelady from New Mexico, are you prepared for an opening statement?

Mrs. WILSON. Thank you, Mr. Chairman. I appreciate your holding this hearing today. I am particularly interested in looking at and talking to you, Mr. Secretary, about the impact that technology can have on medical records and improving the health status and quality for those particularly low-income Americans who depend on some of our public programs.

We have had several hearings on Medicaid here as well as round tables in the Medicaid Task Force that I Chair, asking various State officials about the health status and what indicators they look for and what systems they have, and they usually look at us with a perplexed look, because they don't really look at Medicaid that way. Medicaid is a system that pays claims. It is not one that is designed to improve people's health, and the information systems that back it up are generally fairly primitive.

Putting health indicators and medical records in electronic format I think would make it easier for the government to collect data on quality and also to move toward improving the health of people who depend on these public programs. There are a lot of private hospitals and hospital systems in my district that have made a lot of improvements in health information technology, including med-

ical records, but many of them are very far behind what we need nationwide.

In many ways, the Veterans Administration seems to be ahead of the curve on using information systems. I have seen their health care records, and of course I asked, "How did you get the docs to use it?" And being the VA, they said, "Well, we ordered them to." Not every hospital, I guess, is so fortunate, but if you are retired or disabled veteran in Albuquerque and you visit your daughter-in-law in New Jersey and you get ill, the VA hospital in New Jersey can call up all of your medical records immediately online, and the system is integrated with pharmacy, with medical x-ray and all kinds of other things.

The Federal Government, I think, can lead the way, not only with the proposals that you have come forward with but also by encouraging and moving toward the wide-scale adoption of standardized health information technology systems because of our buying power in Medicare and Medicaid. Medicaid patients often get care at different points of entry. They are often very mobile people, and it is a very difficult population to serve. If hospitals can communicate better in a particular community but also around the country via an electronic network, it would cut down the cost and improve the quality of care for people who depend on public systems.

So I wanted to encourage you to keep Medicaid in mind when you are studying these issues and creating these demonstration projects that link various providers and beneficiaries electronically. Look forward to hearing your testimony about health information technology, and particularly interested in how public health programs, such as Medicaid, can benefit from this new emerging area. Thank you, Mr. Chairman.

Mr. BILIRAKIS. The Chair recognizes the gentlelady from California, Ms. Capps, for her opening statement.

Ms. CAPPS. Mr. Chairman, I would prefer to waive my opening statement in favor of 3 more minutes for questions.

Mr. BILIRAKIS. By all means. Thank you. Mr. Shimkus.

Mr. SHIMKUS. Mr. Chairman, I would like to waive in respect to the Secretary's time. Welcome here.

Mr. BILIRAKIS. Thank you, sir. Mr. Rush just came in. Do you have an opening statement or would you rather waive and use your time later on?

Mr. RUSH. Mr. Chairman, I think I will waive my statement and use my additional 3 minutes for questioning.

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. JOE BARTON, CHAIRMAN, COMMITTEE ON ENERGY AND COMMERCE

Thank you, Chairman Bilirakis, for holding this important hearing today. Medical science in recent years has produced tremendous discoveries that have revolutionized how we treat diseases and care for patients. Unfortunately, the medical records and information technologies needed to take advantage of these discoveries remain locked in an era where cutting edge technologies were slide rules and computers the size of this hearing room. We should be able to do better.

Physicians should not have to rely on bulky and often incomplete medical records. Pharmacists should not have to rely on handwritten and often illegible prescriptions. Most importantly, patients should not have to bear the increased risk of medical errors and pay the inflated costs that result from the use of antiquated health information systems. Other sectors of our economy have adopted the widespread use

of electronic forms and records. So why hasn't the majority of the healthcare sector caught up? This is just one of the questions I hope this hearing will address.

President Bush has called for electronic health records for most Americans within 10 years. I applaud the President for issuing this challenge. It has been estimated that if most patient records were in electronic form the savings could amount to about $140 billion a year. The potential savings offered by technology is staggering and could go a long way towards slowing the tremendous growth in healthcare costs that we've seen over the years.

I would like to extend my thanks to the Secretary of HHS, Tommy Thompson, for appearing before the Committee today. Yesterday Secretary Thompson released the first outline of a 10-year plan to transform the delivery of health care by building a new health information infrastructure, including electronic health records and a new network to link health records nationwide. The system will enable physicians and other healthprofessionals to electronically tap into a wealth of treatment information as they care for patients. The proper use of health information technology promotes knowledge and responsibility for health care decisions and helps them to be smarter consumers of healthcare.

In addition, Secretary Thompson has announced plans to create an Internet portal allowing beneficiaries to access their personal Medicare information. There are a number of other exciting new initiatives that we will learn about today. The Committee offers its support to these efforts and wants to work closely with the Administration on these efforts to help modernize the use of health information technology.

I also appreciate Dr. Kolodner from the Department of Veterans Affairs for agreeing to testify. The VA has done extensive work in this area and I'm pleased that they could be here today to testify as to their experience using this technology.

We would do a disservice to all Americans if we ignored the benefits that health information technology can offer. This technology can transform our healthcare system and bring it into the 21st century, resulting in lower costs and greater quality of care. Once again, I thank Chairman Bilirakis for holding this hearing.

PREPARED STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Thank you, Mr. Chairman and Ranking Member Brown for holding this hearing on the Administration's initiative to implement a national health care information technology system.

This hearing is certainly timely, as it comes on the heels of Secretary Thompson's release of the Administration's outline to improve IT in the health care sector.

Secretary Thompson, we are pleased to have you here today and thank you for appearing before us to share the details of your plan.

Without doubt, information technology usage rates in the health care sector fall far behind IT usage in other cutting-edge US industries.

We're all aware of the benefits that improved IT would bring the health care sector and the patients it serves.

With integrated information technology, patients could manage their electronic health records and avoid having to haul multiple records to their various physicians.

I know of a case where a woman spent years trying to manage her scoliosis.

As such, she endured yearly x-rays and painful exams to determine whether her condition had worsened and would require surgery.

Imagine her frustration when she recently went in for her annual check-up only to find that this year's x-ray was basically useless because the physician had lost the x-rays from previous years.

With no records, no comparison could be made.

And the woman had to make her health care decisions based on a guess, rather than conclusive proof, about whether her condition had worsened.

This is just one example of a mistake that information technology and electronic medical records could have alleviated.

Unfortunately, many of the mistakes have much larger consequences.

The Institute of Medicine estimates that between 44,000 and 98,000 Americans die each year due to medical errors.

The same report acknowledged that electronic health records could prevent many of those deaths through improved health care safety.

We all can agree that the need for health care IT solutions is clear.

We must now facilitate the creation of a comprehensive system that operates effectively and yields significant benefits for both patients and providers.

The question is, what is the best approach?

For this system to work, it is imperative that we have uniform standards.

But standards aren't worth a hill of beans if we don't have the infrastructure to apply them to.

If we're going to make this a national strategy, the federal government is going to have to put its money where its mouth is.

And we're going to have to devise the incentives to encourage the providers to get on board.

Make no mistake, the days of paper records should be well behind us.

It's a matter of efficiency and quality of care.

But in implementing this plan, we have to take every possible opportunity to ensure that patient privacy is held paramount.

Our relatively short experience with the Internet has taught us that information technology can be easily manipulated for mischievous purposes.

I have real concerns about the consequences to the patient if medical records get into the wrong hands.

And I hope that the consortium implementing the Administration's strategy will place tremendous weight on ensuring patient privacy.

I thank Secretary Thompson and all of our distinguished witnesses for appearing before us today.

I look forward to hearing your testimony.

With that, Mr. Chairman, I yield back the balance of my time.

Mr. BILIRAKIS. Okay. Thank you. All right. That being the case, I would like to welcome, the Honorable Tommy Thompson, who is the Secretary of the U.S. Department of Health and Human Services, former Governor.

Mr. Thompson, please proceed.

STATEMENT OF HON. TOMMY G. THOMPSON, SECRETARY, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Mr. THOMPSON. Thank you very much, Mr. Chairman, and thank all the members of the subcommittee for being here, and I thank you so very much for holding this hearing. This is a topic that I am very passionate about. When I started as Secretary, a little over 3½ years ago, the media asked me what were some of the things I wanted to do, and I said I wanted to transform the practice of medicine. And the way to transform the practice of medicine is really start using technology to its fullest.

I have with me David Brailer, who is the new head of the Office of the National Coordinator for Health Information Technology, who has worked extremely hard putting together a draft program, which we unveiled yesterday at a summit. When I first started talking about this about 3½ years ago, I was lucky to get 50 people to come to a summit. A month ago, we had over 500 individuals, yesterday we had 2,300 individuals from all over the country, representing all major technology companies, all health care industry, and today they are working on implementing the strategies that we laid out yesterday.

I don't know how many of you read, "The Tipping Point," the book, "The Tipping Point," but I really think we are now at that point, that we have reached a tipping point, and, as I said yesterday, this is the decade of medical informatics in this country, and we have an opportunity to change that.

Virtually every other sector of the economy is charging ahead into the 21st century except health care, and it is time for the health care industry to catch up. Mr. Chairman and members, you can use your bank card in virtually any ATM in the world. You can go to Bangkok. I just came back from Moscow where I needed some money, went to the ATM and got cash. You can use it any place in the city, any city in America, get your money and find out what

your balance is in your checking account. But if you show up in an emergency room 20 miles from your home, you will have to scramble to track down your medical history.

Yesterday, we had an individual who was a consumer, an informatics consumer, 44 years of age, he has arrhythmia, and the doctor put him on different medications. He overdosed and he passed out. He went to the hospital, they went through many different repeat tests, they didn't even have his current folder because the data wasn't shared. The cost of the duplicate test was more than $10,000. Now, this is an information that is an expert on informatics. That happens every single hospital, every single day in America. That just shows you what we need to do in order to improve it.

If you have a dog, you get an electronic reminder to update your dog's shots like here when you go to the veterinary. Many vets even offer an electronic health record for your dog. Got electronic health records for dogs and cats, but we don't have it for humans. We can alert individuals to have their dogs come in for shots. What about our children? Don't you think it is about time to have our children be able to have this kind of reminder?

Americans spend more resources on health care than people in any other industrialized nation. We get the right treatment, however, according to the RAND study, only 55 percent of the time. For a budget that spends $1.5 trillion, 15 percent of the Gross National Product, I think it is time that we get what we paid for. Think how much better our record will be when health care catches up with banking, journalism and veterinarians. Can you imagine the news media having to go back to typewriters or lenotype to put out their press or put out their newspapers? Some of you may think that is a good idea, but the press would never go there and they put it all out by computers. It is time for health care to get into the 21st century.

Patients deserve advice and care from providers who are fully informed about their medical history, including past injuries, tests, diagnoses and treatments, as well as whatever research results and public health notifications might be relevant. They shouldn't have to wait for redundant tests like this David individual who had to yesterday, and 20 miles from where his hospital was he had to go through all the tests again. It just doesn't make any sense. Ten thousand dollars more he had to spend in redundant tests that he had in his home hospital 20 miles away.

Doctors deserve to focus on the quality of their care, not the quantity of their paperwork. Both patients and doctors deserve systems, Mr. Chairman and members, that will prevent medical errors before they become medical and legal problems. To achieve these goals, Americans deserve a seamless and a secure national health information infrastructure. This system must provide accurate, current patient data to providers wherever they are in time to be useful, even in an emergency. It must allow the doctors to prescribe medications electronically, so that medications can be checked for safety before they are administered, and it must do all this while continuing to keep personally identifiable health information private and secure from unauthorized uses or disclosures.

A good health information system could save our economy and save the medical system $131 billion a year. That is about 10 percent of our total health care spending in America. We all know that a system that is safer, faster, more profitable, more efficient is inevitable. It is inevitable because sooner or later patients are going to demand it when choosing doctors, hospitals and pharmacies. Our health care system needs all the help that it possibly can get.

Health information technology is some of the best medicine we have. We have taken several steps in the past few years in the Department in order to really start moving down the football field toward a touchdown for medical technology. We have now demanded bar coding on medicines to prevent medical errors. Can you imagine that until a couple years ago we didn't have any rules on bar coding of medicines in America? Our groceries, any time you go into a store right now, you go through a grocery store, they swipe all the groceries. Don't you think it is much more importantly to have that kind of technology for pharmacists and for drugs? That is what we are doing, finally.

We have adopted standards for the electronic exchange of medical information. We didn't have standards in this field. Now we have 20 out of the 24 domains in which we have reached unanimous consent for standards. We have licensed a standardized lexicon of diagnosis and treatments called SNOMED. We paid for this through the Department, $14 million. We have got it licensed. We are now allowing it free of charge to hospitals and clinics and to technology companies to put it in their software.

In April, President Bush identified health as one of the most important technology areas for America's future. He said that within 10 years we should have electronic health records for most Americans. I absolutely believe and know that we can do it a lot sooner, evidenced yesterday by the fact that 2,300 people from all over this country came to Washington, D.C. to talk about this subject and how we can do it much faster.

Yesterday, my Department released a framework for strategic action, and it is called here, "The Decade of Health Information Technology," and it is a very good report, and we are very happy with it, because it sets out the guidelines, how we get there, how we make the touchdown. We set out four achieving overarching goals for the health information technology effort. We need to bring these information tools directly to each point of care.

Some private initiatives are already underway in Indianapolis and Santa Barbara. Indianapolis and Santa Barbara are far ahead of the other ones as far as developing synchronized communication systems that can talk to one another, interoperability between those differing clinics. But we need them in all clinical settings across America. We need to then interconnect all these clinical settings across America.

We need to allow patients to become informed consumers and participants in their care. We call this aspect the personal health record. We want to be able to allow individuals—we're setting up a portal in Indianapolis for the first time for Medicare people to call in. We are going to have that set up in order to get their records, be able to have somebody determine their records.

I don't know if you have ever seen the explanation of benefits. I don't know if any of you have ever taken care of somebody on Medicare that has been in the hospital. They send you an explanation of benefits. I used to be a lawyer practicing and people would bring boxes of these in. Nobody could understand them, nobody can decipher them, nobody knows what they mean. And so we are changing that, and we are putting in for the first time a demonstration program in Indianapolis so that you are going to be able to call in and get a simple explanation of what the doctors and what the hospital did for you and what the costs are. It is a giant step forward, and we are hoping that this will become uniform across America so that a patient and all their doctors will be able to see the data that the others have entered.

This is going to ensure that treatment and diagnosis decisions can be informed decisions. If you turn up in the emergency room, the staff can see not only that you have diabetes but what your blood sugar was the last time you checked it. Now, this is very important for somebody that is diabetic that ends up in the emergency room, and this is just common knowledge, common information. The technology is there to give it.

Right now in America, we have upwards to 98,000 people die each year from medical mistakes. Most of those could be changed and completely stopped by new technology, and now it seems to me that is a huge cost to America and to the health care system to have that kind of mistakes in the health care delivery system. We need to improve population health and research with information technology. Health information electronic form and without personal identification can help us measure quality of care and respond much more quickly to disease outbreaks.

We are also doing something else, members of the committee. All of our departments in the Department of Health and Human Services have set up software systems in the past that are different; they are not interoperable. So we have statistics across America on infections, on different kinds of diseases, on kinds of suicides and so on. We are now going to make all of those interoperable so that you are going to be able to call in and get all this information up to date on one web page. We also are going to try and use technology to get the treatment that comes out of NIH from the lab to the bedside much quicker, and we are going to be able to highlight that and be able to use technology to do it.

Congress on both sides of the aisle has provided billions of dollars to improve the research out at NIH. The big problem we have is getting that research into therapies and treatments, to the bedside quicker. Technology can accomplish that. That is part of our plan in order to do it. Our doctors have worked in the dark long enough. Working together, ladies and gentleman on this committee, we can give them light.

And I just would like to tell you, you know I am passionate about it, I believe that this is truly the thing that can transform health care for the better in America. It can reduce mistakes: It can improve the quality and improve the profits and improve the reductions of tax dollars. Now, to me, that is a wonderful plan. All we have to do on a bipartisan basis is come together and get it done. And so thank you very much, Mr. Chairman, for this opportunity

for me to talk to you about technology, and thank you very much for holding this hearing.

[The prepared statement of Hon. Tommy G. Thompson follows:]

PREPARED STATEMENT OF HON. TOMMY G. THOMPSON, SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES

Good morning Mr. Chairman and members of the subcommittee. Thank you for inviting me here today to discuss the Administration's efforts to increase the use of information technology throughout the health care industry. As you know this has been and continues to be a high priority for the President and me. The time is right to take action and it is the goal of this Administration and my Department to promote and encourage the development of a nationwide information technology infrastructure that will transform America's health care and improve quality, decrease medical errors and reduce health care costs. Electronic health information will provide a quantum leap in achieving more efficient and effective health care. We cannot wait any longer.

The most incredible feature of this twenty-first century medicine is that we hold it together with nineteenth century paperwork. This is just inexcusable. And it has to change.

Patients deserve advice and care from providers who are fully informed about their medical history, including past injuries, tests, diagnoses, and treatments, as well as whatever research results and public health notifications might be relevant. They shouldn't have to wait for redundant tests or calls to their previous doctors.

Doctors deserve to focus on the quality of their care, not the quantity of their paperwork. And both patients and doctors deserve systems that will prevent medical errors.

To achieve these aims, Americans deserve a seamless and secure national health information infrastructure. This system must provide accurate, complete patient data to providers wherever they are, in time to be useful-even in an emergency. It must allow doctors to prescribe medications electronically, so the medications can be checked for safety before they are administered. And, it must do all this while continuing to keep personally identifiable health information secure and safe from unauthorized uses or disclosures.

Yesterday, my Department released a Framework for Strategic Action entitled, *The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care.* This framework will guide discussion, investigation and experimentation to accelerate widespread adoption of health information technology in both the public and private sectors.

BACKGROUND

On April 27, 2004, President Bush called for widespread adoption of interoperable electronic health records (EHR) within 10 years and also established the National Coordinator for Health Information Technology position. I appointed David Brailer, MD, to this position on May 6, 2004. The President's Executive Order tasked the Office of the National Coordinator for Health Information Technology (ONCHIT) to report on its progress on the development and implementation of a strategic plan within 90 days of operation. Yesterday, ONCHIT accomplished this task.

The benefits of information technology are evident in our everyday lives, from banks to grocery stores. However, the benefits of information technology have not been applied as effectively to the nation's health information systems. Transfer of information remains primarily a paper-based process. Hospitals' use of electronic health records (EHR) in 2002 was reported at 13 percent; and for physicians' practices at 14 percent to a possible high of 28 percent. Some reasons for slow health IT adoption include the following:

The size and variety of America's health system is large and locally based with many stakeholders. This strategic plan is aimed at bringing together federal leadership along with the many stakeholders to take action.

A previous lack of cohesive federal policies supporting health information technology has also contributed to the lack of technology development. Efforts have been accelerated and are a pertinent part of the strategic plan in which DoD, VA, and OPM have released reports as well to address accelerating federal action.

Perceived lack of return on investment has played a large role in limiting the adoption of health IT [HIT]. The Health Information Technology Leadership Panel announced at yesterday's Summit will evaluate the costs and benefits to society and identify immediate steps for both the private and public sector to take to drive adoption. Additional steps will be taken to identify the best mechanisms to support

training, private sector certification of EHRs, and alignment of incentives as well as other related issues.

CURRENT FEDERAL HEALTH INFORMATION TECHNOLOGY PROGRAMS

I have vigorously pursued health information technology since I became Secretary. Specifically, I have supported the efforts of the FHA to provide a framework for aligning and integrating information technology within the health business processes across the federal government. In addition, since March 2003, I have announced federal adoption of twenty privately developed health information standards. These data standards were selected through collaborative inter-agency work within the Consolidated Health Informatics [CHI] Presidential E-Government Initiative. Adoption of health data standards within an architectural framework will allow federal agencies to share data and to achieve interoperability. In FY 2004, total federal spending on HIT will total over $ 900 million. HHS alone will obligate close to $250 million related to HIT in FY 2004. These federal HIT initiatives range from supporting research in advanced HIT (e.g., high speed Internet, imaging, bioinformatics) to the development and use of electronic health record (EHR) systems.

Standards and Implementation within the Federal Health Architecture

HHS, DoD and VA support the Federal Health Architecture (FHA), the goal of which is to develop a consistent and common architecture for HIT across all federal agencies. This architecture allows for a disciplined approach to information technology investment, and provides a framework for implementation of health data standards.

My Department has led the government-wide effort in endorsing and adopting health information technology standards for government use through the Consolidated Health Informatics (CHI) initiative. Standards adoption has been a core federal initiative led by HHS, DoD, and VA, and has been vetted to the private sector through the National Committee for Vital and Health Statistics (NCVHS). Through the leadership of the ONCHIT, we hope our efforts will stimulate the industry to adopt the standards agreed upon by these large federal health care providers and payors. CHI is one of the 24 e-Gov initiatives supporting the President's Management Agenda.

As a result of HHS's acquisition of a license for SNOMED CT, which I announced in May 2003, this medical vocabulary now can be downloaded for free by anyone in the United States through HHS's National Library of Medicine.HHS is also contracting with the Health Level 7 (HL7) standards development organization to create a standard that would allow interchange of complete electronic health records between any two systems. This is critical to achieving the interoperability we need to be able to ensure that patients' records are always available when and where they are needed. We expect this standard to be available in 2005.

E-prescribing

The new Medicare law requires HHS to recognize or adopt initial e-prescribing standards by September 2005, to pilot test them in 2006 as we roll out the new Medicare drug benefit, and to promulgate final standards no later than 2008. The MMA further provides for grants to physician offices to enable the purchase of e-prescribing systems.

Population HIT

NIH is working to develop an information technology infrastructure to support clinical research. This will enable a system that can interface with health information exchange networks. CDC is facilitating the implementation of a public health information infrastructure and has already demonstrated results. The incident reporting times have dropped from an average of 30 days to 1-2 days. The Public Health Information Network (PHIN) supports a broad range of public health activities including interoperability with clinical care.

Facilitation and Support

The Agency for Health Research and Quality (AHRQ) will spend $50 million in FY 2004 on HIT research and demonstration projects aimed at improving the safety, quality, efficiency, and effectiveness of care. These funds will also support establishment of a Health Information Technology Resource Center to provide technical assistance, education and expert HIT support to HHS grantees.

The Health Resources and Services Administration (HRSA) with the Foundation for e-Health Initiative announced $2.3 million in contracts to support the Connecting Communities for Better Health program. The program is providing seed

funds to implement health information exchanges, including the formation of regional health information organizations.

FRAMEWORK FOR A STRATEGIC PLAN

Yesterday, we released the Department's framework for a strategic plan. This is the nation's first strategic framework report on the 10-year initiative to develop electronic health records and other applications of health information technology. The framework exemplifies our commitment to working closely with the private sector to bring about the enormous benefits of modern information technology for our health care system. Yesterday, I also held a Summit that provided a forum where leaders from the public and private sectors could provide feedback on this strategic plan to realize the President's vision.

There are four major goals that will be pursued in realizing this vision for improved health care:

- Inform clinical practice
- Interconnect clinicians
- Personalize care
- Improve population health

Inform Clinical Practice

This goal centers on efforts to bring electronic health records directly into clinical practice. Both patients and doctors deserve systems that will improve care and make health care delivery more efficient. Providing complete and useful patient information to clinicians when and where they need it is fundamental to achieving the goal of informing clinical practice. Three strategies will enable realization of this goal:

- Incentivize EHR adoption—The transition to safe, more consumer-friendly and regionally integrated care delivery will require shared investments in information tools and changes to current clinical practice. Options for reducing the financial disincentives to electronic health records (HER) adoption should meet at least the following four criteria:
  1. Business case improvement. Policy options should consider, in part, the economic expense borne by a hospital or physician when purchasing or using an HER.
  2. Compatibility with existing programs and regulations. Policy options for HER adoption should be compatible with or incrementally build on existing reimbursement and regulations.
  3. Budget cost-effectiveness. Policy options should be cost-effective and deliver the largest impact for the smallest expenditure.
  4. Stakeholder alignment. Policy options should align physicians, hospitals, and other stakeholders toward a common goal of improving quality and efficiency.
- Reduce risk of EHR investment—Clinicians who purchase EHRs and who attempt to update their clinical practices and office operations face a variety of risks that make the decision unduly challenging. Low cost support systems that reduce risk, failure, and partial use of EHRs are needed.
- Promote EHR diffusion in rural and underserved areas—Practices and hospitals in rural and other underserved areas lag in EHR adoption. Technology transfer and other support efforts are needed to ensure widespread adoption. Currently, there are pilot projects underway that are assessing the feasibility of transferring federal applications, such as VA's computerized patient record system, in rural and underserved areas.

Interconnect Clinicians

Clinicians will be able to obtain more comprehensive health information quickly as they care for patients if we have an interoperable information infrastructure. Interconnecting clinicians will allow information to be more accessible by providers as consumers move from one point of care to another. Three strategies for realizing this goal are:

- Foster regional collaborations—Local oversight of health information exchange that reflects the needs and goals of a population should be developed.
- Develop a national health information network—A set of common intercommunication tools such as mobile authentication, Web services architecture, and security technologies are needed to support data movement that is inexpensive and secure. Standards defining a national health information network that can provide low-cost and secure data movement are needed.

- Coordinate federal health information systems—There is a need for federal health information systems to be interoperable and to exchange data so that federal care delivery, reimbursement, and oversight are more efficient and cost-effective. Through FDA and CHI, these efforts are currently underway.

Personalize Care

To fully complete interoperability, the ability to use information at the consumer level is essential. Consumer-centered information helps individuals take responsibility for their own health and more fully participate in making health care decisions regarding their health and well-being. Strategies to realize this goal include:

- Encourage use of Personal Health Records (PHRs)—Consumers are increasingly seeking information about their care as a means of getting better control over their health care experience, and PHRs that provide customized facts and guidance to them are needed.
- Enhance informed consumer choice—Consumers should have the ability to select clinicians and institutions based on what they value and the information to guide their choice, including the quality of care providers deliver.
- Promote use of telehealth—The use of telehealth can provide access to health services for consumers and clinicians in rural and underserved areas.

Improve Population Health

Population health improvement requires the collection of timely, accurate and detailed clinical information to allow for the evaluation of health care delivery and the reporting of critical findings. This information is important to the future of care delivery and the standard of living in America. Strategies to realize this goal include:

- Unify public health surveillance architectures—An interoperable public health surveillance system is needed that will allow exchange of information, consistent with HIPAA and other laws, to identify public health threats and better protect against disease. Currently, the PHIN is working in conjunction with the Department of Homeland Security on the President's Biosurveillance Initiative, to develop public health surveillance systems that are not only interoperable within the public health arena, but also with law enforcement and other federal agencies.
- Streamline quality and health status monitoring—Many different state and local organizations collect subsets of data for specific purposes and use it in different ways. A streamlined quality-monitoring infrastructure that will allow for a complete look at quality and other issues in real-time and at the point of care is needed.
- Accelerate research and dissemination—Information tools and standards are needed that can broaden the availability of health data to researchers and accelerate the development of scientific discoveries and their translation into clinically useful products, applications, and knowledge.

KEY ACTIONS

Enormous utility will be realized once a national infrastructure is in place. This is necessary to realize the President's vision. A range of actions was announced at yesterday's Summit covering initiatives already underway or soon to be launched. These key actions will advance the strategic elements of the framework.

Establishing a Health Information Technology Leadership Panel

I will soon appoint a panel of executives and leaders to assess the costs and benefits of health information technology to industry and society, and develop options for immediate steps by both the public and private sector, based on their individual business experience. The Health Information Technology Leadership Panel will deliver a report on these options to me no later than Fall 2004.

Private sector certification of health information technology products

EHRs and even specific components such as decision support software are unique among clinical tools in that they are not required to meet a set of minimal standards to be used to deliver care. To increase uptake of EHRs and reduce the risk of product implementation failure, the federal government is exploring ways to work with the private sector to develop minimal product standards for EHR functionality, interoperability, and security. A private sector ambulatory EHR certification task force is determining the feasibility of certification of EHR products based on functionality, security, and interoperability.

Funding community health information exchange demonstrations

A health information exchange program through the Health Resources and Services Administration, Office of the Advancement of Telehealth (HRSA/OAT), has a cooperative agreement with the Foundation for e-Health Initiative to administer contracts to support the Connecting Communities for Better Health (CCBH) Program totaling $2.3 million. This program is providing seed funds and support to multistakeholder collaborations within communities (both geographic and non-geographic) to implement health information exchanges, including the formation of regional health information organizations (RHIOs) to drive improvements in health care quality, safety, and efficiency. The specific communities that will receive the funding through this program were announced and recognized during the Summit on July 21.

Requiring standards to facilitate electronic prescribing

CMS will be proposing a regulation to adopt the first set of widely used e-prescribing standards in preparation for the implementation of the new Medicare drug benefit in 2006. When the final standards are adopted, the Medicare Prescription Drug Plan (PDP) sponsors will be required to support e-prescribing, which will significantly drive adoption across the United States. Health plans and pharmacy benefit managers that are PDP sponsors could work with RHIOs, including physician offices, to implement private industry-certified interoperable e-prescribing tools and to train and support clinicians.

Establishing a Medicare beneficiary portal

An immediate step in improving consumer access to personal and customized health information is CMS's Medicare Beneficiary Portal, which provides secure health information via the Internet. This portal will be hosted by a private company under contract with CMS, and will enable authorized Medicare beneficiaries to have access to their information online or by calling 1-800-MEDICARE. Initially the portal will provide access to fee-for-service claims information, which includes claims type, dates of service, and procedures. The pilot test for the portal will be conducted for the residents of Indiana. In the near term, CMS plans to expand the portal to include prevention information in the form of reminders to beneficiaries to schedule their Medicare-covered preventive health care services.

Adopting standards to automate clinical research

FDA and NIH, together with the Clinical Data Interchange Standards Consortium (CDISC), a consortium of over 40 pharmaceutical companies and clinical research organizations, have developed a standard for representing observations made in clinical trials called the Study Data Tabulation Model (SDTM). This model will facilitate the automation of the largely paper-based clinical research process, which will lead to greater efficiencies in industry and government-sponsored clinical research. The first release of the model and associated implementation guide was finalized prior to the July 21 Summit and represents an important step by government, academia, and industry in working together to accelerate research through the use of standards and HIT.

Commitment to standards

A key component of progress in interoperable health information is the development of technically sound and robustly specified interoperability standards and policies. As discussed previously, there have been considerable efforts by HHS, DoD, and VA to adopt health information standards for use by all federal health agencies as part of the FHA and CHI initiatives. The agencies have agreed to endorse 20 sets of standards to make it easier for information to be shared across agencies and to serve as a model for the private sector. Additionally, the Public Health Information Network (PHIN) and the National Electronic Disease Surveillance System (NEDSS), under the leadership of the Centers for Disease Control and Prevention (CDC), have made notable progress in development of shared data models, data standards, and controlled vocabularies for electronic laboratory reporting and health information exchange. With HHS support, Health Level 7 (HL7) has also created a functional model and standards for the EHR. We hope that these efforts will stimulate the industry to adopt the standards agreed upon by these large federal health care providers and payors.

PUBLIC-PRIVATE PARTNERSHIP

Leaders across the public and private sector recognize that the adoption and effective use of HIT requires a joint effort between federal, state, and local governments and the private sector. The value of HIT will be best realized under the conditions

of a competitive technology industry, privately operated support services, choice among clinicians and provider organizations, and payers who reward clinicians based on quality. The Federal government has already played an active role in the evolution and use of HIT. In FY04, total federal spending on HIT was more than $900 million. Initiatives range from supporting research in advanced HIT to the development and use of EHR systems. Much of this work demonstrates that HIT can be used effectively in supporting health care delivery and improving quality and patient safety.

ROLE OF THE NATIONAL COORDINATOR FOR HEALTH INFORMATION TECHNOLOGY

Executive Order 13335 directed the appointment of the National Coordinator for Health Information Technology to coordinate programs and policies regarding HIT across the federal government. The National Coordinator is charged with directing HIT programs within HHS and coordinating them with those of other relevant Executive Branch agencies. In fulfillment of this, the National Coordinator has taken responsibility for the National Health Information Infrastructure Initiative (NHII), the FHA, and the Consolidated Health Informatics Initiative (CHI), and is currently assessing other health information technology programs and efforts. In addition, the National Coordinator is charged with coordinating outreach and consultation between the federal government and the private sector. As part of this, the National Coordinator will coordinate with the National Committee on Vital Health Statistics (NCVHS) and other advisory committees.

CONCLUSION

Transforming health care through health IT will result in better care—care that is higher in quality, safer, and more consumer-responsive—and at the same time more efficient. Our national strategy for HIT is needed to achieve transformation. Interconnecting clinicians, consumer-centric customized health information and care, more treatment options and choices will be realized. HIT will improve population health so that public health risks, and clinical research can be enhanced.

The time is now to meet this challenge, however the changes necessary are inevitable, needed and beneficial. The Administration has put forth the framework, we look forward to the actions that will be taken over the next decade to ensure Americans they will be the beneficiaries of the best health care that can be delivered.

Your thoughtful leadership and that of your subcommittee toward achieving this goal are widely recognized. I look forward to your continued support and leadership that will further enable the Executive Branch and private sector leadership to transform our paper based health care system into an electronic, quality-based system that we all can count on. I look forward to your questions.

Mr. BILIRAKIS. Thank you very much, Mr. Secretary. As usual, you waste no words, and your passion is——

Mr. THOMPSON. I don't have much time left, Mr. Chairman. I want to get this done.

Mr. BILIRAKIS. Well, Mr. Secretary, I guess that goes really to my generic generally type question, and that is why don't we do it? What is keeping us from doing it?

Mr. THOMPSON. What has happened——

Mr. BILIRAKIS. It is a no-brainer.

Mr. THOMPSON. What has happened in the past, Mr. Chairman, is that there haven't been any standards, any standards in hospitals and clinics, so why invest—because technology is moving so rapidly, why should I invest in this system? Will it in fact be the kind of technology that is going to be used in the past?

No. 2, we haven't at the Department or in Congress or the administration, we haven't demanded, we haven't pushed it. And, No. 3, they haven't seen, insurance companies haven't demanded it, and clinics haven't seen where it's in their best interest to do so. Doctors are also very independent. Doctors have to have straight As in order to get into any medical school in America except for one course. The one course is handwriting, and they still can't write

legibly and so it is the one area that there still are a lot of mistakes. So it is important for us to do it.

So what we have done? We have required bar coding. No. 2, we have now had a group of individuals come together and it has been unanimously agreed to—20 out of the 24 domains and we have reached unanimous consent on the standards.

No. 3, the pathologists have come up with a way called SNOMED, synchronized medical terms, because some doctors use head, some use brain, some use skull. We put this all together, and it is called SNOMED. We have licensed that, and now that is being given out free of charge. And the technology companies and the software companies are going to use SNOMED as the common language, as the common vernacular.

So now we are at the tipping point. We have done all this. We have got the standards; we have got bar coding; we have got the vocabulary. Now all we have to do is also say that for those 12 percent that are still sending paper claims into Medicare, you are not going to get paid as much compared to if you send it on the computer. So it is moving. All we have to do is get Congress to start helping to push it and I think we can accomplish it.

Mr. BILIRAKIS. How would Congress do that?

Mr. THOMPSON. Well, there is several ways Congress can do it. For instance, Congressman Stupak mentioned dollars. Everybody is looking for dollars. First off, let me respond by saying that other sectors of the economy have done it without the government giving them money to do so. I mean the news media have changed over all to high technology, banking has, all the grocery stores in America—grocery stores are much more technologically advanced than our hospitals and clinics. That is sad to say but they are. And they have all done it. So you can make the argument, "Well, why do you have to do it?" Well, sometimes you have to prime the pump, and we are putting in demonstration dollars in order to do that.

There is another idea that I have had that I will throw out, and I think that—you know, I have got ideas, I don't know if you want to take them up or not, but we take in fraud and abuse dollars of $1 billion—we took in $1.2 billion this year and people say, "You can't use that money because it is used for other things." Well, fine. Give me a cap at $1 billion and any fraud and abuse we get from fraudulent providers of services above that allow that money to go into the mini-Bilirakis fund to be used on a one-to-one match or two-to-one match for people to go into high technology.

Or number three, there is a thing that we did at the State level. We put up revenue bonds. The Federal Government would put in a small amount of money like on Fannie Mae or Freddie Mac or something like this, put in a small amount of money and then allow revenue bonds to be issued and have it like a revolving bank for people to use that as capital. That is one way that Congress could look at it. Other ways Congress could say in 5 years there is going to be no more payments on Medicare, or 3 years, no more payments on Medicare on paper. That is going to drive the system faster than anything.

Number three, Congress could force the Department of Defense, Department of Veterans Affairs and Department of Health and Human Services all together. We are doing it on a voluntary basis,

but Congress could step in and demand that we all have unanimity and high technology, and that is going to drive the system. So there are many ways Congress could help.

Mr. BILIRAKIS. Well, you certainly make a good case for it, sir. I know our information is from the administration that there would be something like $140 billion per year savings. In your statement, you mentioned 130, 131. Bart made the comment that the private sector would indicate that probably as much as maybe 25 percent savings. My God, we are talking about big money here now. Obviously, there would be some costs incurred and we would have to have some information for our great CBO to try to give us some credit for those savings somewhere along the line, and that, as you know, is not an easy thing to do.

Mr. THOMPSON. The Federal Government spends $780 billion a year on medical care. The total budget is $1.5 trillion for health care. If you just took 1 percent, it would be $7.8 billion to put into technology and save the money, but, you know, CBO probably would not score it that way, and OMB will probably—I will probably get a nasty letter when I get back that I even suggested that, but I am telling you that those are the kinds of things—if you want to think out of the box, if you want to make health care more competitive, better quality and less expensive, these are the kinds of things that we have to do as a country.

Mr. BILIRAKIS. Sure. I should think that we all are agreeable, and I should think we could have some sort of a task force that maybe we can add people from your office and from the private sector too and work up a way to do this. Shame on us. Shame on us. That is the kind of impression you have made on me, put it that way.

Mr. THOMPSON. I didn't want to ever say that about you, Mr. Bilirakis. Other people in Congress I might, but not you, my friend.

Mr. BILIRAKIS. Mr. Stupak to inquire.

Mr. THOMPSON. Not anybody in this committee, I want to add.

Mr. STUPAK. Let me ask my questions, then you might reconsider that. You talk about this health care technology, and I agree it can be very important, I think it could improve the quality of health care, but I have got to go back to the Medicare debate we had on the Medicare drug discount card. We tried to put in there mandatory that doctors had to electronically fill out their prescriptions, and doctors objected, "No, we can't do it. We don't have the money. We can't get up to speed," so it is voluntary. So the docs really aren't doing it in the Medicare prescription discount card that we have out there.

So as we push this thing and as the chairman said, why don't we just go ahead and do it, you indicated that the insurance companies are concerned about it, there aren't enough standards, you have got 20 of the 24 domains out there, but it certainly looks like to me from listening to your testimony that they are waiting for the government to do it, to really say, "These are the standards, they are not going to change, so once we get these things up and running we know what we can count on and we can rely upon on."

So I still have some hesitancy here, and I think the government is going to have to step up and do it. And in the plan that was released yesterday, I think you only had $2.3 million in seed money.

So if the docs aren't going to do it underneath the Medicare discount card, that is voluntary, and if the insurance companies are waiting, and the standards aren't uniform throughout the industry, how do we do it with only $2.3 million in seed money then, other than just say, "Do it and you are going to have to eat the cost."

Mr. THOMPSON. Well, first off, I happen to like you, you are from Michigan, Upper Peninsula, which you stole from Wisconsin some time ago.

Mr. STUPAK. That was Toledo, that was Ohio.

Mr. THOMPSON. The standards were created by our Department, Congressman Stupak, and I set up a committee and we worked on it with the private sector and they are unanimous agreed to, 20 out of the 24. So the standards are there.

Mr. STUPAK. Okay.

Mr. THOMPSON. We have got the uniform vocabulary called SNOMED. That is there right now. We have got the bar coding. So the government has stepped in here, and we have done it without any orders from Congress. The Department has just gone out and done that. We have set up a coordinating committee with the Department of Veterans Affairs, and one of the—Congresswoman Wilson said it best, the Veterans Affairs Department is ahead of us. They are doing a much better job than anybody else as far as technology. And we have just got to follow those kind of leads and get it done, and we can do it.

The $2 million to $3 million was just for HRSA. There is an additional $50 million in AHRQ, which has got grants and setting up demonstration programs. In our budget, we are asking for an additional $100 million, Congressman Stupak, in order for demonstration plans to get these things started. Indianapolis clinics and Santa Barbara clinics are doing the best job as far as technology and connecting different clinics within the communities to do it. We need to take that and then we need to get regional things and then we need to get a national system. And that is what we are—we set up a task force yesterday to do it, and I have said I am going to be appointing those individuals and we are expecting to get a report back by October on how we can set up a national system.

So we are starting at the national level through the Department of Health and Human Services, Veterans Affairs and Department of Defense and the local level with these regional things, these regional embryonic things in Indianapolis, and now we have got to drive both ends together.

Mr. STUPAK. In the prescription drug bill, doctors won't do it, it is voluntary. If you take a look at this——

Mr. THOMPSON. I would have supported you on that.

Mr. STUPAK. Would you support us on doing an FSS, Federal Supply Service, for Veterans Administration as opposed to a Medicare bill, because that will drive down the cost of the prescriptions by 40 percent?

Mr. THOMPSON. Well, that is a big difference between what you first said and what you are just asking me now, sir.

Mr. STUPAK. Well, since you were agreeing with me, I thought we could go one more.

Mr. THOMPSON. Well, you don't want to push me too far.

Mr. STUPAK. Well, let me ask you this, going back to the financing. In my opening, I said Mayo Clinic spent over $100 million just in 1 year to do it, and I still see small physicians practices are going to come up—they are not going to be able to come up with these big monies to do this. Even with free technology, they still need training and integration to make this work, and this all costs money.

So while the system may be there, to actually get the docs to use it and small clinics, especially in rural areas, to do it, when you look at Mayo Clinic, which, as you know, is in Rochester, Minnesota, not necessarily the biggest place in the world, but they spent over $100 million just in 1 year to try to implement something like this. How do the rest of the clinics around the Nation do it? And the Mayo Clinic just in Rochester alone is pretty big to have 25,000 employees up there but they still spent $100 million in 1 year. So how do you get the rest of them to do it?

Mr. THOMPSON. Well, Congressman Stupak, let me just respond. Every other sector of the economy has done it without the government's help. I mean every other sector, the groceries, financial, manufacturing, they have all done it. And, second, how expensive is it to that clinic and doctor and hospital to have a mistake. There are 98,000 people died last year, according to the Institute of Medicine, because a mistake is made. It is an extremely expensive thing for clinics and hospitals to have mistakes. Technology will prevent at least 50 percent of that.

I know that people say it has got to be money, but I look at the other side of it and say—and on the other side you are going to save money by having technology. If you invest in technology, you are going to save money. You are going to be faster, more efficient, more productive and safer and more profitable.

Mr. STUPAK. And I agree, it probably works in profit-driven industries like groceries, things like that. I don't see it working so well in service industries.

Mr. THOMPSON. But even saying that, maybe you should take my idea about taking a cap on fraud and abuse and make the mini-Bilirakis law or the mini-Stupak law.

Mr. BILIRAKIS. The point is there is more than one way to skin a cat, and I think we should open up our thinking in this regard, and I am sure Mr. Stupak——

Mr. THOMPSON. I have got many ideas if you ever want to sit down and talk to me about them.

Mr. BILIRAKIS. Mrs. Wilson to inquire.

Mrs. WILSON. Thank you, Mr. Chairman. Thank you, Mr. Secretary, for being here again. Have you done any thinking about how do you handle the issue of privacy as we implement a more electronic and more interoperable systems, because I hear that as a major, and it is, as a major concern of how do you ensure that—it is a lot easier to make sure that only the doc has access to the documents when they are stuck in his office and he can't find them anyway. When they become electronic, there is greater accessibility and the potential for inappropriate use is there.

Mr. THOMPSON. Congress has passed a law, the HIPAA law, and we have implemented it, and I think we have done a pretty darn good job of implementing it in the Department. And we certainly

want to protect privacy. Number two, your bank accounts are very private. I mean banks can do it, insurance companies do it. Why can a bank have privacy on your bank account, which is very private, and we can't do it for technology.

Yesterday, we had the—2,300 people from all over America showed up. Every State was represented. Every technology company was represented. They just don't think the privacy thing is that problematic. We have got to demand and ensure that it is private, but the technology is there to continue to make it private. And my rejoinder to you is, isn't it less problematic to have it in a private number or a private identification of a patient in a computer than it is in a manila folder putting out there where everybody walks through and looks at it or something like this in the library? I think your privacy—your records are probably much more easily distributed or misplaced or somebody else has got a better chance to see in a manila folder than it does with technology.

Mrs. WILSON. I don't disagree with you on the fact that this is a soluble problem, but it is one that we are concerned about——

Mr. THOMPSON. Yes, I know it is. It is one I am concerned about too.

Mrs. WILSON. [continuing] because you have bigger access to the system. I wondered if you would expand a little on the summit. We all know there is a summit going on on health information technology, and I wondered if you would expand about what some of the major outcomes were of that summit and what you saw.

Mr. THOMPSON. Well, first off, we put out this strategic framework, and we are going to have, first, informed clinical practice, how we can encourage clinicals to start setting up systems. Second, interconnect the clinicians so that clinics in all of New York or all of Boston are able to communicate with one another and pass the thing. Third one, personalized care, how you develop a personal health record. And, fourth, how you are going to be able to improve population health. And this is what I was talking about where all of the statistics come in to CDC. You know how many forms and reports are filed with CDC? A lot of them are different, they are not interoperable. What we want to do is develop that system. We also want to develop in public health how we are able to get the therapies and treatment out of NIH faster from the laboratory to the bedside so much quicker. Some people say it takes 17 years. That is ridiculous in this modern age to develop a cure for a malady over 14 or 17 years if we could do it much faster. And so these are the kind of things we laid out.

On top of that we are going to set up a Technology Committee that is going to report back to me in 60 days how we are going to implement this. And the second thing was is we are going to set up a Certification Committee, mostly in the private sector with some people from the Department of Veterans and Defense and Health and Human Services that is going to be able to certify the kind of equipment that is going to have the functionality plus the interoperability, because we want to make sure that the equipment that is being sold to software would have sort of a certificate in the private sector that this machine, this software will do what it is supposed to be able to do.

And the third thing we want to do is we set up a portal and we are going to try something with Medicare and with the clinics in Indianapolis, and we are going to set it up so that somebody on Medicare is going to go in and be able to get their own records from Medicare, be able to use the web page, the Internet, to be able to get their own records, their own information, something that is badly needed. The technology is there, and I think it would help the person if you are able to get your own records, be able to determine what your illnesses are and get some treatments and so on and so forth. So it is an increase in information sharing with the individual patient with Medicare.

Mrs. WILSON. One final question, and that is has the Department done any studies quantifying the savings or benefits to information technologies applies to Medicaid or Medicare?

Mr. THOMPSON. We haven't done it specifically for Medicaid and Medicare, although I know it—being a governor, I know it would be tremendous if you had the technology, up-to-date modern technology on Medicaid. I know there would be huge savings. It is just bound to. But we haven't quantified it for Medicaid or Medicare. What we have tried to do through AHRQ, through our research arm at the Department of Health and Human Services. We tried to quantify what the savings would be for the total health care dollar, and that is about $131 billion to $140 billion. It is about 10 percent of the total health care dollars we think could be saved by having technology utilized fully.

Mrs. WILSON. Thank you.

Mr. BILIRAKIS. The gentlelady from California, Ms. Capps, for 8 minutes.

Ms. CAPPS. Thank you, Mr. Chairman. Once again, thank you, Secretary Thompson, for making yourself available to this committee. I have been impressed with the number of times you have done that, and because I don't know how many more times there will be this occasion in this session of Congress, I wanted to thank you for your leadership and I think especially of my interest and yours in the shortage of nurses and how you have really demonstrated leadership in the country on that topic.

Mr. THOMPSON. You have been a giant in that field, and I thank you.

Ms. CAPPS. Well, the work isn't done yet, but your leadership has been enormous in that area. Particularly, I want to thank you for almost single-handedly but with a great team making obesity a national issue, calling it what it is—an epidemic. And I think we are beginning to see the fruits of that, and we owe you a great deal for that leadership. I remember visiting the Counter Bioterrorism Center you have developed, so you have been very busy and active during your time and always with such passion that it is infectious whenever you come in the room. It is like we have to hurry up and get these things done.

All right. I want to take advantage—and also I want to thank you for recognizing the health initiative in Santa Barbara County. They came and got an award yesterday, and that is something that can be a model for other communities. They did it kind of on their own ideas, many of them, and I am a big champion of what they have accomplished as well.

I want to take advantage of our subtitle and I want to use this time I have, if I may, to address some concerns that I have, because I value so much your response in helping us. Mr. Secretary, as you know, in May, the Food and Drug Administration rejected over-the-counter status for emergency contraception, known as Plan B. As you know, Plan B is not an abortion, it is not the same as methophrestone or RU-486. It is simply a highly concentrated dose of contraceptives. And experts estimate that over-the-counter availability would result in 150,000 fewer abortions every year.

Over-the-counter sales would particularly help victims of sexual assault. In the United States, every year, about 25,000 women become pregnant as the result of rape. An estimated 88 percent could be prevented if sexual assault victims had timely access to emergency contraception. This is what I want to get to with you: This decision was made over the recommendation of the Agency's own Advisory Committee, it is my understanding, at least, and that this committee or committees voted 23 to 4 to allow over-the-counter sales and 27 to 0 that it was medically safe.

But in spite of this consensus among scientific and medical staff at the FDA, the Agency rejected this, and some have said that this decision politicized the whole process, and that is my concern. These accusations and the controversy surrounding the decision for some people put into the question the reliability and reputation of the Food and Drug Administration over which you have responsibility. And so I want to take some time—I didn't have my opening statement so I could get your response to some questions I have about this.

In the past several years, for example, or under your watch, how many times and for what drugs has the Director of Acting Director of the Center for Drug Evaluation and Research, CDER, rejected the recommendation of Advisory Committees of the FDA staff for over-the-counter drugs?

Mr. THOMPSON. I don't know.

Ms. CAPPS. Is it possible to find that out?

Mr. THOMPSON. Sure. Absolutely. I don't know.

Ms. CAPPS. I would appreciate it. And I wondered what role you, if any, you played or any other political appointees at FDA, the Department of Health and Human Services or elsewhere, have a role? How was this decision arrived at that you can share with me?

Mr. THOMPSON. The decision is scientifically based, scientifically reviewed by peer review. I have nothing to do with any decisions dealing with medicines at FDA or any kind of treatments. That is completely outside of my bailiwick. In regards to this one, as I understand it, the committee and the individuals that are responsible for this are waiting for continuing scientific information as to how this would affect teens. So that process is continuing, as I understand it.

Ms. CAPPS. So it isn't a done deal?

Mr. THOMPSON. It is my understanding that they are waiting for some more scientific evidence from the company as to how this would impact on teens.

Ms. CAPPS. But you nodded when I mentioned the votes.

Mr. THOMPSON. Yes.

Ms. CAPPS. That the Advisory Committee did make this recommendation. And I guess you are going to get back to us. Because it is customary, isn't it, for the Advisory Committee's recommendations to stand?

Mr. THOMPSON. Yes. I think there have been examples, but I don't know how many, Congresswoman, but I will get that information to you. You should have it—it should be readily available, so you should have it next week.

Ms. CAPPS. Okay. I appreciate that, because I would like to——

Mr. BILIRAKIS. I would hope, Lois, that we could stick to the subject. I am not saying that what you are asking is insignificant, but——

Ms. CAPPS. I know.

Mr. BILIRAKIS. [continuing] certainly, it is not the subject matter. And on the floor debates are required to be germane to the subject. And I am not sure, really, what the committee rules are here. Ordinarily I would be leading it in any case, but, come on, let's go back to the subject.

Ms. CAPPS. I know. Well, I appreciate it but I also have not been able to get answers to some of these concerns. I am representing now many people in my district who were quite upset about this, and I don't like to see the reliability of the Agency tarnished in any way. I think it is important that we have a process, and I know it is a vulnerable to politicization, and I just really want us to focus on——

Mr. THOMPSON. I disagree with that.

Ms. CAPPS. Okay.

Mr. THOMPSON. It is possible, but there was no politics played in this at all. They are waiting for some more evidence on this. I am confident no political operative was involved.

Ms. CAPPS. Okay. And also then you are saying that it is not a completely decided yet.

Mr. THOMPSON. It is my understanding that it was turned down waiting more scientific evidence, how this would impact on teens.

Ms. CAPPS. Well, I look forward to seeing——

Mr. THOMPSON. That is my understanding, Congresswoman.

Ms. CAPPS. Well, maybe when you respond as to the number of times in the past that you will also give us some direction as to where this stands.

Mr. THOMPSON. Absolutely.

Ms. CAPPS. And I can inquire more directly of you personally.

Mr. THOMPSON. I just turned to my legislative person, Jennifer Young, and she will have an answer to you next week.

Ms. CAPPS. Thank you. I want to touch on another topic, and I know my chairman is going to say I am stretching it, but this is another huge concern that I have, I only have a minute and a half left. This is a big topic. Among the provisions included in the Medicare bill last year was a change in the payments for cancer care. The old system was clearly broken, I will be the first—all of us would acknowledge that. Medicare and its beneficiaries paid too much for oncology medications. We had hearings on that right in this committee. We agreed that it needed to be fixed. But Medicare also paid oncologists, cancer centers and oncology nurses nothing, too little——

Mr. THOMPSON. That is true.

Ms. CAPPS. [continuing] for the care, the comprehensive care that cancer patients receive. The overpayment for cancer drugs was used to pay, and maybe it was vulnerable, but it was used to pay for treatments that cancer doctors provided to cancer patients through these auxiliary cancer center services. As a result of the changes in the bill, overall reimbursements for 2004 remained the same as in past years, but starting in 2005, drug payments go down as payment shifts from AWP to average sales prices, and this will be a huge decrease in payments to doctors. Transitional payments designed to prevent disruption of cancer care are going to be cut by 29 percent in 2005. The terror and the fear out in the community of cancer patients is enormous and to the oncologists as well.

In May, Dr. Norwood and I and 68 of our colleagues on both sides of the aisle wrote to Administrator McClellan asking for release of the CMS planned payment rates for 2005. This is critical to ensure that the cancer community can be aware of what they are facing and how to avoid disruption. We haven't received a response yet. That is why I stretch the title of this hearing and ask you to see where we can find information that I could take back to our constituents.

Mr. BILIRAKIS. Mr. Secretary, would you give us a date when you might respond to those questions rather than to do it here now?

Mr. THOMPSON. Absolutely.

Mr. BILIRAKIS. All right. Give us a date. When might you she receive it?

Mr. THOMPSON. The first question she will have an answer next week.

Mr. BILIRAKIS. All right.

Mr. THOMPSON. On the cancer one, Dr. McClellan is working on that, so I am not sure. I can't give you a date on that, because he is working on that.

Mr. BILIRAKIS. All right. Ms. Capps is concerned that she hasn't received responses in the past. I want to allay her fears there, but at the same time I want to keep going on the subject matter of the hearing.

Mr. THOMPSON. We have got proposed rules all the time coming out on Medicare. I will get Dr. McClellan to call you.

Ms. CAPPS. Thank you.

Mr. BILIRAKIS. All right.

Ms. CAPPS. Thank you. And thank you, Mr. Chairman.

Mr. BILIRAKIS. Let's see, Mr. Shimkus, for 8 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. Mr. Secretary, it is great to be here. Mr. Stupak looks slender and more healthy, and if he stands up he can probably show you his pedometer that probably—you got it, Bart, today? How many steps today?

Mr. THOMPSON. How many do you have?

Mr. SHIMKUS. Forty-eight thirty-eight? Not bad.

Mr. THOMPSON. I have only got 28.

Mr. SHIMKUS. I am going to double him on the basketball court in about 45 minutes when we get down there. But that is a critical thing, leadership, and you have brought excitement and passion to this debate, and I just want to thank you. It is not an easy one.

I am a part-time partner on this committee, and I try to shy away from this because it is so bureaucratic, paperwork, payment systems, line items. It just drives you crazy. You never hear anything positive. It is always negative. So I just want to continue to applaud you.

The Health Care Leadership Council, I have gone to their little event they have here on the Hill and they show technology. They did it just yesterday, and if you didn't go by, you really should, because this really, with all due respect, it is probably more important that we see the technologies out there in the private sector in this than hear your testimony, because it is there. Bar coding of drugs, patient access to records online, nurse access on dosage to make sure that the proper dosage isn't being applied at the time, at the bedside of the patient. So we are not talking about Star Wars here, we are just talking about technology that is out there to move it into our governmental system for providing health care to Medicare and Medicaid individuals.

I was a county treasurer my first assignment in a very famous country called Madison County, Illinois. Two hundred fifty thousand people when I took office. We collected property taxes. Two billings a year, we had 30 employees, and it was all hand ledger. This was only 15 years ago. We went to spreadsheets, we went to bank statements with microcodes, we went to a P.O. Box for the banks to do some of the billings, we electronically transferred payments back to the property tax districts, the school districts instead of cutting them a check. We saved the taxpayers thousands of dollars, and we decreased the office staff by 10 employees. We did a better job, we were more efficient. So it can be done. And if can't be done anywhere—the private sector is doing it, because they know they have to save money by becoming efficient. It is government that needs the prodding and the pushing, because we are not looking at the bottom line, as the private sector does.

You mentioned some comments before, and I know the VA's here. We have also been successful in getting dollars to a telemedicine clinic in Springfield, Illinois that is now working with the VA hospital in Marion so that patients on just general views with technology and digital cameras and to be able to transfer records, a guy can stay home or a guy can go to the local clinic and be received, in essence, by a doctor through telemedicine, thus saving time, effort and energy. And for rural America, and Wisconsin has got some rural areas, 150, 200 miles of driving at a time.

So I would just give you an opportunity to say how else do you think that we can be helpful through the authorization process that we do or the spending? How can we help you push this change in the Federal bureaucracy?

Mr. THOMPSON. The best thing you can do is just what you got done saying, Congressman, is the fact that there are many examples out there. The VA has got examples, our Department has got many examples that we have done on standards. The fact that you are holding this hearing is an absolute vital one because it is right after the technology summit yesterday. It shows that momentum is there.

Number three, when you are looking at the Medicare reimbursement formulas, you can put in a provision that says that within 3

years, 4 years or 5 years, that all claims have got to be submitted by technology, not in writing anymore. Number four, you can be contacting your own individual hospitals and clinics and inform them of the importance of this, of getting into technology.

Number five, the examples you were saying in Marion, Illinois, which is a good one. It needs now, of course, the national interoperability so that a veteran that is in your hometown, is it Marion or Madison or wherever it is, is going to be able to order drugs if he or she is on vacation or if he or she has an accident in Florida, that their records can be immediately reviewed by somebody in the emergency room so that they are able to treat you or that patient properly.

These are the kind of things that are out there, and every other sector of the economy is there except the health policy and the health fields.

Mr. SHIMKUS. And we have helped facilitate that, even in the years that I have been here, through this committee——

Mr. THOMPSON. Yes.

Mr. SHIMKUS. [continuing] through the Telecommunications Subcommittee when we passed legislation to allow the electronic receipt of signatures. I mean how many people now do refinancing—you can refinance your mortgage through faxes and electronically without ever going into a building anymore.

Mr. THOMPSON. Isn't that great?

Mr. SHIMKUS. Thank heavens, it is wonderful.

Mr. THOMPSON. Yes.

Mr. SHIMKUS. Especially with the busy schedule that people have. So thank you. Keep up the good work.

Mr. THOMPSON. And what you have done as county treasurer in Madison County, what did you do, reduce the employees by 10?

Mr. SHIMKUS. We went from 30 to 20 employees.

Mr. THOMPSON. Yes, by technology. And people say, "Where are we going to get the money?" Look at the savings. Look at the savings. Invest in the savings.

Mr. SHIMKUS. And that is always suspect if the work product was less, but the work product was better, because the taxing—the school districts, the municipalities got their money faster because we didn't have employees writing checks, putting them in the mail, sending them to the taxing districts, they just did it electronically.

Mr. THOMPSON. Can you imagine the cost to America and to Americans when you realize that—if the Institute of Medicine study is correct that 98,000 people died from medical mistakes last year, and a good share of those can be prevented by technology. Imagine what the savings would be just in that category alone.

Mr. SHIMKUS. Well, we had the debates on medical liability, and of course that is why Madison County, Illinois is very infamous, but this whole debate a lot of times hinges around medical errors, and a lot of medical errors occur because of—and I am one of those that have terrible handwriting—when you use technology and you have to keystroke entries on what is there, you will bypass a lot of those errors. The technology I viewed yesterday, if the doctor wanted a 20 milligram dosage and they——

Mr. THOMPSON. Or a microgram, that is a 1,000——

Mr. SHIMKUS. Yes. And it looks like an eight and then the nurse puts in eight and the screen pops up and says, "Hey, this is 10 times more than what the doctor had prescribed." Blaring lights, sirens, and if it can save one life, it is worth the effort.

So thank you for the time. I will give you back my five seconds, Mr. Chairman. I yield back.

Mr. BILIRAKIS. Mr. Rush for 8 minutes.

Mr. RUSH. Thank you also, Mr. Secretary, and I want to join with others who have welcomed you here and who have applauded you for your leadership and for your position on various issues as it relates to health care. You are the governor of a neighboring State of my State, and it is good to know that you have come to Chicago on many occasions and helped us tremendously there, and I appreciate your eloquence and your passion on IT issues and how it vastly—and I agree with you, how it would vastly improve health care in the future.

I want to discuss the issue right now of something that is presently before us. It is not in the future, it is right here, right now, and that is the issue of information technology and how it affects the 340-B Drug Pricing Program. Again, it is an immediate issue. And the Inspector General, in June, issued a report on overcharging of prescription drugs under the 340-B Program. The report is entitled, "The Appropriateness of the 340-B Drug Prices." In the report, the Office of the Inspector General recommends that HHS' Health Resources and Services Administration create and maintain a secure web-based system so providers can verify that the prices they are charged with in fact comply with 340-B, and this system would be accessible only by password.

As you know, right now drug manufacturers are not really accountable to anyone and have been consistently and illegally charging 340-B public hospitals and community health centers more than they are allowed to under the law. And I wanted to get your response and ask you what do you think of the OIG's suggestion for a secure web site that would create accountability? And are you in the process of implementing such a system, and what is you overall view of that, of the system?

Mr. THOMPSON. Well, first off, thank you very much for the question, Congressman Rush, and thank you also for your passion in your district. I have followed you from afar and also gotten to know you since I have been out here, and I have always been very impressed by you, and I thank you.

In regards to 340-B, you know that anything dealing with community health clinics it is near and dear to me. I am very passionate about them. I believe so much in them. And anything that detracts from them I get very irritated. And so I have asked HRSA, which is responsible for community clinics, to do some research on it, to make recommendations to me. They are in the process of that. I just turned to my staff to find out when those recommendations are going to be. They don't know yet, but they are coming soon.

In regards to the OIG report, I will receive suggestions they have to improve the system and any that I am in favor of—I will look at that, and before I leave I will do everything I possibly can to implement it.

Mr. RUSH. Mr. Secretary, I really appreciate your comments, and I know your passion for community health centers. And since my question was pretty direct and you gave me a pretty direct answer and I have got some additional time, would you comment, please, on the status of school-based health clinics? Mr. Chairman, we are going a little bit far away from the subject matter, but the Secretary and I agree on so much and I just wanted to know that we agree of the importance of the school-based health clinics, and what do you see the role in the future—how do you see the role in the future of school-based health clinics?

Mr. THOMPSON. Well, I think school-based clinics are badly needed. I think any way that we can deliver health care to our children in an effective way it is important. That may be the only health care that that child or children is able to get. And I happen to be one of those believers that children need as much good quality health care as they possibly can receive. And if that is where they are going to get it, then I am in favor of it.

Mr. RUSH. Mr. Chairman, I yield back.

Mr. BILIRAKIS. The Chair thanks the gentleman. Mr. Buyer to inquire.

Mr. BUYER. Thank you, Mr. Secretary. Given the liberty that members are taking and the latitude of the chairman, I need to take mine. You have done a great job with regard to the drug discount card in signing up a lot of people——

Mr. THOMPSON. Thank you.

Mr. BUYER. [continuing] but a lot of those cards aren't getting in people's hands. And I know Dr. McClellan's working on that, but I just want you to know you can talk to any Member of Congress and they are having some problems even getting the cards and lag times. And I think you know that, but I just wanted to reinforce it. Thank you, Mr. Chairman, for the latitude.

On the—gosh, I have to go back. In the late 1990's, I Chaired the Personnel Committee on Armed Services, so I had the military health delivery system working on IT. Now I Chair O&I on VA working on IT, and I get to be here with my colleagues here and we work on IT. The great thing is we have got all three, I have got experience with all three. The downside of that is I also have experienced great pains over the years, because the initiatives that we are talking about today aren't new initiatives.

These things have been there from 1997. There have been discussions about VA, your departments and DOD and seamless interoperable, bi-directional, multidirectional, standards-based, and we haven't done a very good job, I don't think, at the beginning. GAO, you can pull up any imaginable GAO report with regard to the exchange of health data and they have been very critical of a lot of the IT. So I was a good listener to your opening statement, especially in your response to Mr. Bilirakis' question on what can Congress can do.

A lot of this can and should be done through the executive function. Coming off of a hearing yesterday on this, I just want you to know where I think we can be really helpful. I think we are going to have to change structure. In this town, those who have the money have the power, and if you want to break the bureaucracies, you give—whoever is in charge of information management give

him the money. And that is what I am about prepared to do with the VA.

And so I will take the Assistant Secretary, who is Bob McFarland, out at Dell Computer, who has come to help the country and he is getting pretty frustrated by the bureaucracies and the three stovepipes that we have, and I am prepared to change structure for the VA. And I am going to give him the money, and I am going to stop having the IT having to go beg. And I just am curious about your comment if we begin to change structure and give the money and let's turn the table here on IT. A lot of projects out there. We have funded billions of dollars, and there is a huge graveyard out there with IT projects.

Mr. THOMPSON. Congressman Buyer, first, let me thank you for your advocacy for the cards. You have done an outstanding job, and I know of your passion for it and what you have done, and I appreciate it, and I am in your debt.

Mr. BUYER. Thank you.

Mr. THOMPSON. In regards to the mistakes being made, any time you start a program as large and as monumental as this, you are going to make some mistakes along the way. We have tried to fix them as soon as we see them. If you have got any suggestions, please give them to us. Dr. McClellan and everybody in the Secretary's office is very concerned, and we are working on all of these problems as fast as we possibly can and coming up, I think, with good results.

In regards to—I sort of like your idea. Somebody suggested that there should be somebody over in OMB or in each one of the departments that is in the technology field that has the veto power over any budget increases in any divisions if it doesn't meet the technological standards, and it certainly would change the thinking processes, and it would certainly change the outcomes a great deal. And so your idea of changing the structures I have no difficulty with it at all and think that you would accomplish a great deal when you do it.

Mr. BUYER. When Dr. Kaiser decentralized within the VA and we have gone to so many outpatient clinics and given more power to visions and we say if you get collect money, you get to keep money. What that has also done is create a lot of little kingdoms out there——

Mr. THOMPSON. Yes. Right.

Mr. BUYER. [continuing] and we don't have standardizations, and we have really a lot of problems, and as you try to work with NIH.

Anyway, this isn't just to steambull your idea, the Marine Corps said, "We're going to take control here of ourselves," and they put all the power in one person. And it has worked very, very well, but we don't have that across the board in our departments.

Mr. THOMPSON. No, we don't.

Mr. BUYER. And I just wanted to let you know that is what I'm thinking, and I appreciate your counsel. Thank you.

Mr. THOMPSON. I would—well——

Mr. BUYER. Go ahead.

Mr. THOMPSON. I would think that the more power that you could give to a secretary to run his or her department, Congress

would be much better served and the people would be—the secretary.

Mr. BILIRAKIS. Enough said. Ms. Eshoo to inquire.

Ms. ESHOO. Thank you, Mr. Chairman. Welcome, Mr. Secretary——

Mr. THOMPSON. It is always a pleasure.

Ms. ESHOO. [continuing] and thank you for your service to our country. It shows that you have, as everyone here has said, you have a passion about it, you care about it, and I think that whenever you decide that your tenure ends, your contributions——

Mr. THOMPSON. In January.

Ms. ESHOO. [continuing] will be lasting.

Mr. THOMPSON. Thank you very much.

Ms. ESHOO. Well, we all have parentheses around what we do, so thank you. And, Mr. Chairman, thank you for holding what I think is really a very important hearing. The other night I found myself, there must be something wrong with me that I have C-SPAN on even when I get back to my apartment, but I am not so inclined to listen to the National Governors Association meeting but the headline of it was, "Health Care in the Digital Age." And the keynote speakers were Newt Gingrich, the former Speaker of the House, Leon Panetta, the former Chief of Staff at the White House, and I don't remember the gentleman's name but he was outstanding, the man that heads up Starbucks. And so much of what we have talked about here today, about the number of lives that are lost due to medical errors and how we improve our health care system so that there is a jointness, a sharing, an integration of technology is absolutely front and center in the 21st century. We are facing it across the board in the Federal Government. The 9/11 Commission came out with its report today, talked about smokestacks and within the intelligence community that they had a need to know but not a need to share.

And I think that there are two ways to maybe draw a line and to two columns. One of it is private. I mean we have hospitals, obviously, that are public hospitals, we have district hospitals, we have private hospitals. And it seems to me that with those hospitals we have got to strike a partnership with them. The reason they are not doing it—why so many are not doing it, there is not an incentive, and there has to be a little bit of a carrot in this. Do I think we have enough money to incent all of them to pay for or do their systems? Of course we don't, and I don't think we are the ones that should be doing that. But I think that with, first of all, leadership from the Federal level where we say, "This is a priority," and then they follow some kind of model.

I think the idea, Mr. Chairman, and we can do this, is your idea, Mr. Secretary, about over a certain number in the abuse or the fraud dollars that are secured by the Department, that that be dedicated to this. I also think that we should be looking at mechanisms for very low interest loans. They will be able to do that. You know, in California, after the big earthquake, the legislature told the hospitals that they had to retrofit by such and such a date. Well, they never came up with a mechanism for this, you see, and they didn't have the money to retrofit. For many of them, retrofitting was tearing the place down and building a new hospital.

So we have mechanisms where we can help make that happen, and I think that we shouldn't think of this thing as being so massive that it can't be done. The technologies are already out there. Congress doesn't have to invest this stuff.

Now, in terms of Federal operations, we have to come up with some standard and how we are going to do that, but you can take care of that, we can take care of it in the various committees. It is reaching the other hospitals, the rest of the hospital community across the country. In my district—I mean we always need success stories, someone was saying so much is negative—El Camino Hospital in Mountain View, California—and before you leave if you find yourself in California, I would love to accompany you there.

Mr. THOMPSON. I would love to go. Thank you.

Ms. ESHOO. Exactly. They have made an investment in their patients, and it is the first hospital in the world to become paperless. They have 97 percent of all their orders by 200 of their doctors are done electronically. Now, they set it as a priority, so we can do this, and I welcome your leadership. This committee should pick up on these ideas and get them into legislative language. Again, we can incent them. We can set some money aside, you have got something there, but this is from the Secretary's Office got to bring some of the private hospitals together and the country hospitals, the public hospitals. Let them participate in it too.

You are local, State government, and so you think in a very solution-oriented way, and I welcome it. I come from country government, so I am trying to think that way. I think we have the ingredients here.

Mr. THOMPSON. We do.

Ms. ESHOO. And I would be happy to work with the chairman, with you, with your office, with all of my colleagues. You can tell that you have a real bipartisan spirit here because of the way you have worked and conducted yourself, Mr. Secretary. So those are two things that I think we can do.

Mr. THOMPSON. Thank you very much.

Mr. BILIRAKIS. Any response?

Mr. THOMPSON. Thank you for your invitation. I would be more than happy to come out.

Ms. ESHOO. Yes. I would love it if you would. We would be thrilled.

Mr. THOMPSON. And I am looking for that example where it is completely paperless. I am not sure it is completely paperless. I bet you still have a manila folder or an application come in.

Ms. ESHOO. Maybe. This is what they told me, and when people talk about——

Mr. THOMPSON. I want to see that hospital where you can go onto your computer, make your appointments, go in and go through all the departments, end up having your medical care, have your bill when you walk out and never see any paper. That is what I want.

Ms. ESHOO. Absolutely.

Mr. BILIRAKIS. Well, I think——

Ms. ESHOO. Their x-rays are digital.

Mr. THOMPSON. That is great.

Ms. ESHOO. Yes. So come and see.

Mr. BILIRAKIS. Mr. Secretary, again, thank you. I mean everybody has thanked you, and we really mean it. You have been here before us so many times, and you have got to be one of the busiest people in the world, and yet you find time for it, and we appreciate it so much. Thank you——

Mr. THOMPSON. You are wonderful people. Thank you.

Mr. BILIRAKIS. [continuing] for encouraging us and spurring us on on this subject.

Mr. THOMPSON. Thank you very much.

Mr. BILIRAKIS. Thank you very much. The next panel will consist of Robert M. Robert M. Kolodner, Acting Chief Health Informatics, Officer and Deputy Chief Information Officer for Health, for the U.S. Department Of Veterans Affairs; Dr. David Blumenthal, director for the Institute for Health Policy, Massachusetts General Hospital/Partners with the Health Care System; Dr. Carol Diamond, managing director of the Markle Foundation, Rockefeller Plaza, New York; and Dr. Edward H. Shortliffe, professor and chair of the Department Of Biomedical Informatics, also professor of medicine and of computer science and deputy vice president for Strategic Information Resources—pretty busy person—Columbia University Medical Center.

Welcome, Doctors, here. You have been in the room. I think you see a real interest and hopefully a real fire in us as far as this subject is concerned, and we look forward to your testimony. Your written statement is already a part of the record. We would hope in the 5 minutes that we allot you that you would complement it, supplement it somewhat. Hopefully, you can stay within about 5 minutes. If you are a minute or 2 over, I am not going to shut you off. But in the interest of time—hopefully we can get through before we have to run for further votes.

Dr. Kolodner—is that correct?

Mr. KOLODNER. Kolodner, sir.

Mr. BILIRAKIS. Good. Kolodner. Kolodner. Dr. Kolodner, please proceed.

STATEMENTS OF ROBERT M. KOLODNER, ACTING CHIEF HEALTH INFORMATICS OFFICER AND DEPUTY CHIEF INFORMATION OFFICER FOR HEALTH, U.S. DEPARTMENT OF VETERANS AFFAIRS; DAVID BLUMENTHAL, DIRECTOR, INSTITUTE FOR HEALTH POLICY, MASSACHUSETTS GENERAL HOSPITAL/PARTNERS HEALTH CARE SYSTEM; CAROL DIAMOND, MANAGING DIRECTOR, MARKLE FOUNDATION; AND EDWARD H. SHORTLIFFE, PROFESSOR AND CHAIR, DEPARTMENT OF BIOMEDICAL INFORMATICS, PROFESSOR OF MEDICINE AND OF COMPUTER SCIENCE, DEPUTY VICE PRESIDENT FOR STRATEGIC INFORMATION RESOURCES, COLUMBIA UNIVERSITY MEDICAL CENTER, DIRECTOR, MEDICAL INFORMATICS SERVICES, NEW YORK PRESBYTERIAN HOSPITAL

Mr. KOLODNER. Thank you. And, Mr. Chairman, I just wanted to confirm I will be doing a statement and then a demo. I believe that was what the staff agreed to.

Mr. BILIRAKIS. Is your mic on?

Mr. KOLODNER. Is that—that works, okay. Very good. Mr. Chairman and members of the subcommittee, good afternoon. I am Rob Kolodner, a physician in the Department of Veterans Affairs. I currently serve in two related roles as both the Acting Deputy Chief Information Officer for Health for VA and as the Acting Chief Health Informatics Officer within the Veterans Health Administration. I am pleased to be here today to discuss the importance of benefits of health IT and to underscore VA's commitment to the strategic framework released yesterday.

Over the past several years, VA, through its Health*e*People strategy, had initiated or joined in efforts to stimulate the use of information technologies in health care by working with Federal, State and industry partners. This strategy addresses four key health IT components: The electronic health records, or EHRs, personal health records and two critical pieces necessary to exchange health information among them, the National Health Data and Communication Standards and an information exchange infrastructure.

Even by themselves, EHRs can help us provide better, safer and more consistent care to all patients, and that better quality care actually costs less. VA is a recognized leader in the development and use of health IT to the benefit of our Nation's veterans. VA's VistA System is a comprehensive EHR system, and let me describe a few key components. VA's Computerized Patient Records System, or CPRS, provides a single integrated application used by health care providers in all VA medical centers, nursing homes and clinics, and I will be demonstrating that shortly. CPRS virtually eliminates medication errors caused by illegible handwriting and through automated allergy and alerts prevents potentially dangerous treatments from being ordered.

VA's Bar Code Medication Administration System, or BCMA, uses bar code technology on all medications and on the patient's wristband to ensure that each patient receives the correct medication, in the correct dose, at the correct time. Shortly, I will also show you the VistA Imaging, which provides the ability to capture and display a wide variety of medical images.

You may be thinking this sounds great but is it really being used by doctors, nurses and other health professionals. VA's VistA Systems now contains more than 1.1 billion orders as well as half a billion notes and reports, and these numbers are growing quickly. Daily, in VA facilities, more than 865,000 orders and over half a million progress notes will be entered electronically by VA providers, and 585,000 medications will be administered safely using BCMA.

Does this technology really make a difference in health care. As a physician, I have seen firsthand the benefits of EHRs in VA, including immediate access to information, elimination of duplicate orders and increased patient safety. CPRS has helped VA become one of the best performing health systems in the U.S. VA sets the benchmark for clinical performance indicators proven to save lives, such as higher use of beta blockers after a heart attack and higher screenings for cancer.

And we have already begun to build our next generation standards-based interoperable EHR system to move us from being facility-centric to person-centric. Earlier I mentioned personal health

records. VA's My Health*e*Vet is a web-based personal health record for all veterans. This type of capability will transform the way veterans participate in their health care experience and get information about their wellness and care. Version 1 contains health information resources, and by next year veterans will be able to have a secure copy of key portions of their health record from VA's VistA Systems.

In the area of standards, VA was instrumental in the formation of the interagency consolidated health informatics initiative to foster the adoption of Federal interoperability health standards. In the area of information exchange infrastructure, VA and DOD developed a Health*e*People Federal Plan to ensure the development of an interoperable electronic virtual health record by 2005 to better serve our Nation's veterans.

The Federal Health Information Exchange Phase I project deployed in June 2002, makes health records over 2 million unique veterans and servicemembers makes their DOD electronic records available to VA providers. Phase II, starting in late 2005, will provide for the joint development and implementation of interoperability between VA's health data repository and DOD's clinical data repository.

As Dr. Jon Perlin, VA's Acting Undersecretary for Health, announced yesterday at the Health IT Summit, VA is working with Centers for Medicare and Medicaid Services to release early next year a VistA Office EHR. And it is a version of VA's VistA system configured to meet the needs of community health clinics and office-based practices in rural and underserved areas. We look forward to sharing our knowledge, expertise and where desired our systems with our partners throughout the health care community to support the strategic framework for transforming health care to improve patient safety and quality of care.

Dr. Perlin has asked me to convey an invitation to all of you to see VA's Electronic Health Record in action at the VA Medical Center just a mile away in Washington. In the interim, I would like to provide a brief demonstration of VA's Electronic Health Record so you can better appreciate the capabilities we think are critical for every health provider nationwide to have available in order to provide better, safer care to all patients.

At this time, let me turn on the screens and hopefully they will show, and you will see on the screens up above you I will be opening up what we call CPRS. This is the clinicians interface. And by the way, the entire VistA system, that which can run large tertiary care hospitals in Houston or west L.A., all of that software is running on my laptop here in addition to the imaging software.

So I click on the icon and normally in a regular system I would be asked for a security password and access code, and then I would see this screen. This is an opening screen where I can choose which patient I want to see. It also gives me a variety of alerts for patients that are mine about notes that are unsigned or orders that have come in, abnormal orders. By the way, the information you will see here is real patient data, but it has been scrubbed so there is no identifying data, but it is not made up data in terms of what you will be seeing.

So at this point, let me select a patient, Mr. Madliff, and Mr. Madliff, when we select him, we get his cover sheet. At this time, I am also going to open up the VistA Imaging and have that available on the screen. This portion here that I am pointing to in the center is CPRS. It basically uses the metaphor of a chart and so you see tabs along here that look just like a chart that clinicians would normally be using and are familiar with. It also has brief summaries of the various diagnoses or medications. If I want to look at the person's blood pressure or weight, I can do that. And not only can I look at that, but I can also graph it. And very often in the examining room we actually have the terminal so we can turn it to the patient and show, in this case, "Mr. Madliff, we noticed that your weight has been increasing recently," and we can discuss with him what has been happening as far as the diet or exercise and can actually engage him by having him see the data that we see as well.

Now, Mr. Madliff is somebody who has a particular problem. He came in and we looked at his laboratories, and in fact we can open those here and quickly graph them. I will pull up his hematocrit, which is the count of his red blood cells, and we will take a look at all the results. And we see here that on a number of occasions Mr. Madliff had a very steep drop in his blood count. Actually, if we look very carefully, we can see that during these times, as we expand that data, that not only was there a drop, but in this case there was a sharp rise twice. You don't normally develop red cells that fast. That meant that he actually got a transfusion because of his anemia.

So when he came in then the issue is what is cause of his anemia? We did a colonoscopy and fortunately we are well past lunch here. This is actually a picture captured from the colonoscopy, and so this picture would be available to all of his providers. It shows here that he has these structures here. This is diverticulosis that he has, but, more importantly, we actually saw during that occasion here bright red blood, so he was bleeding, and he had some sort of a bleed in his colon.

Now, the question is where did that come from, and so we actually did something called a bleeding scan where we inject some dye and take an x-ray. And this particular one was done about 1992. It was before we had the digital systems, so this was done on film. The patient was in the ICU, and when they went to look at this film on the light box, the normal way of looking at an x-ray, they were simply not able to find where the bleeding was. So a physician's assistant took it over because the imaging system had just been installed there. He actually scanned in the x-ray and then brought it up, and this allowed us to use some of the digital techniques that you can use on x-rays to look at them. And, one of the advantages of this is that we can actually adjust the x-ray, and this was from a standard x-ray, to be able to see different parts of the x-ray better.

And what we did was we looked out in this area and you will see right here a little hazy area, and actually, if we invert it, we can see a little bit better here. And this area, where it is not sharp but it is very hazy, is in fact where the bleeding was, and we were able to locate it, and they were able to then pass a catheter and

actually stop the bleeding by closing off that clot. So that is Mr. Madliff. You can see right at the fingertips you have got all of the data. It is available at any place in the hospital. The images are available any place in the hospital.

Let me now take you to another patient. We are going to select——

Mr. BILIRAKIS. Doctor, forgive me for interrupting you, but we have three votes on the floor. The buzzing you may have heard was not bees, it was an indication of votes on the floor. So we are going to have to break, and I apologize to you, but I was hoping we could maybe get through before that. But as soon as we finish up with these three votes, we will be back, and hopefully we can get a few more people back here. Very fascinating, I might add. Thank you very much. We are going to recess for a few minutes. That is all I can tell you.

[Brief recess.]

Mr. BILIRAKIS. Mr. Kolodner, you weren't finished yet, right? You had another example for us?

Mr. KOLODNER. One more example, sir, and then I will be finished, so my colleagues can——

Mr. BILIRAKIS. Okay. Please proceed.

Mr. KOLODNER. Thank you. This is Mr. Green, and Mr. Green has a cardiology problem. There is a cardiology note, as you see here, with a little icon next to it, so when you click on that it actually opens up the appropriate images. In this case, he had a cardiac cath, and so we see here the image itself, and we can in fact see why Mr. Green has been having some chest pain. This is coronary artery in the narrowing. In this case, we can show that to the individual and indicate why he is having the pain.

Now, normally what we would do is during that cath we would actually go ahead and take care of the problem, so a little bit later on here we actually have the balloon in place so that it is opening up the area, and we can finally follow it with a follow-up film that we can actually show to the person to show that in fact that area is now wide open, and so we have taken care of the problem.

And, obviously, in terms of working with somebody and educating them and helping them understand what their problem was, in this case, why it is important for him to take his follow-up medications, why he has to follow a diet so that this doesn't happen again, it is a very powerful way of engaging the veteran in improving their collaboration in participation in care.

So at that point, I am finished my demo, Mr. Chairman.

[The prepared statement of Robert M. Kolodner follows:]

PREPARED STATEMENT OF ROBERT M. KOLODNER, ACTING CHIEF HEALTH INFOMATICS OFFICER AND DEPUTY CHIEF INFORMATION OFFICER FOR HEALTH, DEPARTMENT OF VETERANS AFFAIRS

Mr. Chairman and Members of the Subcommittee: I am pleased to be here today to discuss the importance of electronic health records and the role of the Department of Veterans Affairs (VA) in the development, use, and sharing of this valuable technology.

Recently, President Bush outlined an ambitious plan to ensure that most Americans have electronic health records within 10 years. The President noted a range of benefits possible with the expanded use of information technology, including improved health care quality; reduced frequency of medical errors; advancements in the delivery of appropriate, evidence-based medical care; greater coordination of care

among different providers; and increased privacy and security protections for personal health information.

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

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

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

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

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

The Benefits of Electronic Health Records

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

How can EHRs improve patient safety and quality of care? First, with an EHR, all relevant information is available—and legible. A provider can quickly review information from previous visits, have ready access to clinical guidelines, and survey research results to find the most appropriate treatments and medications. All of this information is available wherever patients are seen—in acute settings, clinics, examining rooms, nursing stations, and offices. With CPRS, providers can quickly flip through electronic "pages" of a patient's record to review or add information. All components of a patient's medical record—including progress notes, referrals, orders, test results, images, medications, advance directives, future appointments, and demographic data—are readily accessible at the point of care.

Many of us see different doctors for different medical conditions. How many of these physicians have access to all of the information that has been collected over the course of these visits? In VHA, patient records from multiple sites and different providers can be viewed at the same time at the point of care. This is simply not

possible with paper records. Additionally, most clinicians find EHRs more convenient to use than traditional paper records. They are less cluttered, easier to read, faster and more reliable for finding items of information that the providers are seeking. In addition, the EHR supports enhanced views to help provide more information than that of a single test result, for example, presenting a graph of a specific type of laboratory test over a period of time for a single patient or for multiple patients.

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

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

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

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

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

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

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

The Importance of Standards

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

The National Health Information Infrastructure (NHII) initiative recognizes the importance of data and communications standards in developing a comprehensive network of interoperable health information systems across the public and private sectors. Interoperability is dependent, in large part, upon the adoption of common standards. With data standards, health information exchange will allow for more

cross comparability and speed retrieval of "like" clinical information to deliver safer, higher quality care using clinical alerts and reminders.

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

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

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

Data Standards and Interoperability

Our data standardization efforts have also improved our ability to share information with other agencies. In accordance with the various confidentiality statutes and regulations governing these records, safeguards have been implemented to ensure that the privacy of individuals is protected throughout these collaborative projects. These confidentiality statutes and regulations include the Privacy Act, the HIPAA Privacy Rule (which are uniform federal privacy standards protecting individuals' protected health information in the possession of covered health care providers and entities), and several agency-specific authorities.

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

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

In May 2004, GAO reviewed the Plan and recommended that VA and DoD document a comprehensive joint project management plan and project management structure. In response to GAO recommendations, VA and DoD clarified the existing project management structure that provides executive oversight by the chief information officers of the Military Health System and the Veterans Health Administration. This project-management structure ensures day-to-day joint accountability and decision-making authority. Additional oversight comes through the VA/DoD Health Executive Council, co-chaired by the Assistant Secretary of Defense for Health Affairs and VA's Under Secretary for Health. The two Departments are finalizing an updated joint project management plan.

The EHR Plan will guide VA and DoD in the joint development of interoperable electronic health records to enable access to health information by authorized users throughout DoD and VA. This will be achieved through the transparent interaction of health systems or applications between DoD and VA. Providers of care in both departments will be able to access relevant medical information to aid them in patient care for shared patients.

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

The first phase of the plan, the Federal Health Information Exchange (FHIE), was deployed July 2002. FHIE provides historical data on separated and retired military personnel and beneficiaries from DoD's Composite Health Care System (CHCS) to the FHIE framework; the information is then accessible in VA through CPRS. Currently, there are over two million unique DoD electronic records available for retrieval from the FHIE repository, and the volume of information available through FHIE continues to grow as individuals are discharged to veteran status.

The next phase of the EHR Plan is the joint development and acquisition of interoperable data repositories by the departments. The departments have formed an active working integrated project team to implement the exchange of clinical data between the VA Health Data Repository (HDR) and the DoD Clinical Data Repository (CDR). By linking these two systems, the departments will achieve interoperability of health information between DoD's CHCS II and VA's HealtheVet-VistA. Using clinical decision support applications, providers in both departments will be able to access and use relevant health information to aid them in making medication decisions for their patients, regardless of whether that information resides in VA's or DoD's information systems.

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

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

VA and DoD will be better positioned to evaluate health problems among service members after they leave military service, veterans, and shared beneficiary patients; to address short- and long-term post-deployment health questions; and to document any changes in health status that may be relevant for determining disability.

VistA-Office EHR

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

VistA and CPRS are in the public domain. They have been adopted for use in the District of Columbia's Department of Health, American Samoa, and several state

health departments and state veterans homes. A number of countries, including Germany, Finland, Great Britain, Mexico, and Ireland, have either implemented VistA or expressed an interest in acquiring the technology.

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

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

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

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

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

EHR Availability to Rural and Medically Underserved Communities

By Executive Order, the President directed that the Secretaries of the Departments of Veterans Affairs (VA) and Defense (DoD) develop a joint approach to work with the private sector to make their health information systems available as an affordable option for providers in rural and medically underserved communities. This approach provides coordinated VA/DoD recommendations that focus on the capture of lessons-learned, technology and knowledge transfers from data exchange initiatives, the adoption of common standards and terminologies, and the development of telehealth technologies.

In cooperation with HHS, and as also mandated by the President's Executive Order, VA contributed to the development of a national Strategic Plan that will address a coordinated strategy to improve the delivery of health care by evaluating and recommending technologies that are available across the federal government. VA is providing input on collaborative approaches, public and private, being taken to transform clinical practice and health care delivery using the EHR. Emphasis for collaboration has focused on these areas:

Knowledge Transfer of Information

VA already has realized the target benefits of adopting EHRs and is ready to share our experience to expand the use of the EHR, and related information technologies, to the larger health community. Much of VA's VistA system was developed by VA government resources and therefore, the software exists in the public domain.

Through on-going and active collaborations with a number of government and private-sector resources, VA encourages the proliferation of public domain technologies based on VistA code. This approach reduces expensive development costs associated with software and human capital requirements, and makes proven EHR technology an affordable and direct-transfer option to rural and medically underserved communities.

Adoption of Common Standards and Terminologies

VA and DoD have achieved the common adoption of an initial set of standards through the Consolidated Health Informatics (CHI) initiative. In partnership with HHS, VA and DoD are lead partners in the CHI project, one of the 24 eGov initiatives supporting the President's Management Agenda. The goal of the CHI initiative is to establish federal health information interoperability standards as the basis for electronic health data transfer in federal health activities and projects.

TeleHealth Technologies Used for Long Distance Consultations

Telehealth makes up a significant component in how VA intends to fulfill its mission to care for veteran patients. Telehealth involves the provision of health care services when patient and provider are separated in time and/or place, and take place using electronic media. Telemedicine is included within the broader rubric of telehealth. Within VA, telehealth transactions most often involve care between all professional groups and patients, not just physicians. The expansion of telehealth is an important part of the mission of VA, and directly supports coordinated delivery of care.

The computerized medical record is a critical component to VA's strategy for the expansion of telehealth. For example, using videoconferencing to connect a patient with a provider situated many hundreds of miles away could not take place safely and effectively without having the patient's health record, laboratory results and clinical images available. VA is working to expand the concept of the multi-media record into the home using home-telehealth technologies and My Health*e*Vet. In VA, technology is not the driver; rather, technology is supportive of the way in which VA meets the changing nature of the health needs of veteran patients.

Personal Health Records and My HealtheVet

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

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

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

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

The first version of the national My Health*e*Vet, released last fall, includes a library of information on medical conditions, medications, health news, and preven-

tive health. Veterans will be able to use the system to explore health topics, research diseases and conditions, learn about veteran-specific conditions, understand medication and treatment options, assess and improve their wellness, view seasonal health reminders, and more. Subsequent releases will provide additional capabilities, enabling veterans to request prescription refills on-line, view upcoming appointments, and see co-payment balances. The My HealtheVet pilot, which includes personal health data, has been piloted at 9 VA medical centers for nearly two years. Protecting patient health data has been a key focus in developing the system. The pilot guarantees that all patient data is encrypted for storage, not directly readable, and not identifiable by name. A security penetration study conducted by an independent contractor was very positive. The system also meets all the requirements for security as established by the VA Office of Cyber Security.

In the future, veterans will be able to request and maintain a copy of key portions of their health records from VistA and to grant authority to view that information to family members, veterans' service officers, and VA and non-VA clinicians involved in their care. VA is also working with DoD and other partner organizations to develop a longitudinal health record that will incorporate information from DoD, VA, and private-sector health providers from whom the veteran has sought care.

Summary

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

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

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

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

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

Mr. BILIRAKIS. Thank you so very much, Doctor. Fascinating, really.

Dr. Blumenthal, please proceed, sir.

STATEMENT OF DAVID BLUMENTHAL

Mr. BLUMENTHAL. Thank you, Mr. Chairman, for inviting me to participate here today. My name is David Blumenthal, and I am a professor of Medicine and Health Policy at Harvard Medical School, also a practicing primary care physician. And just for the record, I would love to have that medical record, that electronic

technology to work with. I do work with an electronic health record, but it doesn't have nearly the power that the VA system does.

It is difficult, I think, for experts in this field to make concrete the power of this set of technologies, and I think two analogies may be useful, although they are not perfect, in trying to think about the importance of health IT. And the first is a really powerful intervention that we know by the name antibiotics, and the second is our Nation's transportation system. I think that health IT has every bit as much capacity to improve the health of our population, perhaps more, than antibiotics do, and in fact health IT would enable us to use antibiotics more effectively by making sure that we use them when they were appropriate, use them in the right does, use them at the right time.

If we had antibiotics sitting around on the shelves unused and waiting to be used, the protests from the American public would shake the roofs of this great body and every legislature around the country, yet that is exactly the situation in which we find ourselves.

The other point I wanted to make is about the transportation system. Our means of transportation are largely privately owned, and people decide what kind of transportation they want to take. The cars that they use and the buses are privately owned, the airplanes are privately owned. But they wouldn't be very useful if we didn't have superhighways to let them travel from State to State, and they wouldn't be very useful if we didn't have air traffic controllers to keep them moving in an orderly way and in a safe way. And to some degree, the lack of a transportation system, lack of information superstructure is what makes us—one of the things that prevents health IT from being used as efficiently as it could be.

There is enormous bipartisan support obviously for health IT. I think the difficulty will come when we get to talking about precisely what to do. I think we need to do four kinds of things, all of which were discussed to some degree this afternoon already. The first is that the Federal Government needs to lead in the development of standards for communication, that information highway that I mentioned. I think that is what interoperability through uniform standards really comes down to. The second is that we need financial support and incentives to hasten the adoption of health IT and especially to hasten it for cash-strapped small providers of care and for rural and for providers and hospitals that serve indigent and rural populations.

We need a lot of research and development to continue the progress that we have seen in the development of health IT, and we shouldn't forget that we have a lot to learn still to improve how it is used and to improve the products that are out there and understand its positive and its negative effects. And then I think we need the relaxation of certain fraud and abuse statutes that inhibit the development of health IT.

Let me just say a little bit more about a couple of these points. First, the provision of financial support or incentives. The Secretary referred, I think, to the use of Medicare as a lever or Medicare payment, and I think that it is not unreasonable to think in the future, not right away, but in the future of requiring as a con-

dition of participation in Medicare that hospitals and doctors have access to and use electronic health records. That is not something you would want to do tomorrow, but with due warning I think it is possible.

The second point I would like to make is that there are in fact very important financial disincentives to adopt health information technology, especially for individual physicians and small groups. There is good evidence that the process of adoption reduces productivity for physicians by 10 to 20 percent, which means that they get a 10 to 20 percent loss of income in the short term associated with the—and that is on top of the cost of purchasing the equipment. And that is a lot to take in a time of constrained incomes, and we need to find some way to get them over that hump. And 60 percent of American physicians still practice in groups of less than 5.

The other point I would like to make is that institutions in poor and rural areas have trouble accumulating capital to expend the kind of money that we have been talking about, and they will need help to get access to that capital.

The options for providing this kind of—in addition to conditions of Medicare payment, you have heard discussed some of the options for providing the support. It could include loans or grants or increased payments through reimbursement mechanisms under Medicare or Medicaid. All I think should be on the table and looked at closely.

We clearly need a multifaceted, comprehensive approach with multiple points of attack in order to get this antibiotic equivalent out to the American people at this point, and I am sure that all of us here today look forward to working with you on that project. And I want to thank you again for giving me the opportunity to appear before you today.

[The prepared statement of David Blumenthal follows:]

PREPARED STATEMENT OF DAVID BLUMENTHAL, DIRECTOR, INSTITUTE FOR HEALTH POLICY, MASSACHUSETTS GENERAL HOSPITAL AND PARTNERS HEALTHCARE SYSTEM

Mr. Chairman, members of the Committee, thank you for the opportunity to appear before you today to discuss our nation's approach to realizing the benefits of health care information systems. My name is David Blumenthal. I am a primary care physician practicing medicine in Boston, Massachusetts. I am also Director of the Institute for Health Policy at Massachusetts General Hospital and Partners HealthCare System in Boston, and Samuel O. Thier Professor of Medicine and Professor of Health Care Policy at Harvard Medical. My responsibilities further include directing the Harvard Program on Health Systems Improvement, which is a university-wide program designed to develop and encourage innovative approaches to delivering health care to the American people.

Though I am not personally as expert on clinical information systems as the other distinguished members of this panel, it is impossible for anyone who studies our health care system today to avoid the issue of health information technology or HIT as it is commonly known. The reason is that the set of technologies and capabilities embodied in HIT is so powerful and so important that they must be factored into any decisions facing public officials and private managers who desire to improve the health of the American people or to improve the quality and efficiency of health service delivery.

It is difficult sometimes, even for experts, to make concrete the potential value of IT systems in health care, so let me use two analogies—admittedly imperfect—to try to capture the importance of health IT. The first is to antibiotics. The second to our nation-wide transportation system.

If a discovery with the life-saving potential of antibiotics were sitting unused on warehouse shelves around America, while thousands upon thousands of Americans were suffering and dying untreated, there would be an outcry that would shake the

roof of this great legislative body, and every other legislature throughout the U.S. I believe that clinical IT has the power to save as many or more lives than antibiotics—indeed, clinical IT has the power to make sure that antibiotics themselves are used more effectively, to save more lives and prevent more suffering. But clinical IT systems are sitting unused, and will not be employed to their full potential unless we act collectively to assure this will happen.

The analogy to the nation's transportation system speaks to a slightly different issue: the importance of coordinated public and private action to unleash the power of clinical IT. The means of transportation in our country are, for the most part, privately owned and operated. Airlines, trucks, most railroads, and millions upon millions of automobiles are owned and operated by private companies and individuals who decide what equipment to use, where to go and when, the color of the seats and whether they should be leather or vinyl. That is clearly the way the American people want it.

But how useful would our private means of transportation be if we didn't have highways to travel on, or air traffic controllers to assure that airplanes can move safely and securely from one city to another and land in an orderly (if not always timely) manner? Even if every doctor, hospital and nursing home in the country had the best available computers and software to manage clinical information, it would still be essential to have a means of moving that information from one place to another in a reliable, secure fashion, so that patients and their doctors could take advantage of it wherever they go. In other words, we need a secure, modern national information superhighway that criss-crosses our country, just as we have a national transportation infrastructure. To get that information highway will require public-private partnerships in which government plays a leadership role.

In recent months, a remarkable consensus, bridging partisan, ideological and professional divides, has emerged in support of the propagation of health information technology in the U.S. The question is what precisely government should do and over what time frame. I think a consensus is emerging in this regard as well, though I suspect much hard work remains to reach agreement on the specifics. The core required elements are captured in the excellent document released today by Secretary Thompson, but their details need to be rapidly defined and put into policy. I would personally emphasize the following particular actions as critical:

1. Federal leadership in the development of standards for communication between IT systems that will enable interoperability.
2. The provision of some financial support and/or incentives to hasten the adoption of IT and its life-saving potential, especially for small, cash strapped providers of care, like small physician groups, and for hospitals that serve indigent and rural populations.
3. Continued research and development to refine the uses of IT, and especially, to demonstrate and disseminate approaches to creating seamless community wide information networks.
4. Relaxation of certain fraud and abuse restrictions that inhibit collaboration between doctors and hospitals in the development of IT systems.

The first, third and fourth of these proposals are critical to creating the information superhighway of which I spoke earlier. They are equivalent to designing the interstates and the air traffic grid, demonstrating how they work, and clearing away critical obstacles.

The second policy direction, the provision of financial support, is likely to be particularly difficult to agree upon during a time when federal deficits are skyrocketing and health care spending is also about to balloon as the new Medicare prescription drug benefit comes on line. It is also clear that there are many health care providers in this country, including large integrated health care systems and powerful, prestigious hospitals, that do not need any external financial support to plug into the modern world of health IT. Nevertheless, help is needed for the following specific groups:

1. Physicians in solo practice and small groups who still constitute 60 percent of practicing physicians in the U.S. These doctors often do not have the expertise or the money to purchase, learn, maintain and trouble-shoot new health IT systems. Furthermore, even in organized health systems such as HMOs, the adoption of IT systems reduces productivity in the short term by 10 to 20 percent or more. For physicians in fee-for-service practice, a 10 percent reduction in revenue is a high price to pay for health IT at a time when their incomes are often falling.
2. Many health care institutions serving disproportionate numbers of indigent patients lack the capital to maintain their physical plants, much less spend tens of millions of dollars to put in place new IT systems. If we are not careful, popu-

lations served by these institutions will fall further behind mainstream America in the care that is available to them. Not only that, but these institutions will fail to realize the efficiencies that IT can bring in the long term.

The options for providing financial assistance to providers who need it are several. They include revolving loans, grants, and increased payments to providers who adopt IT systems with basic capabilities. Whatever particular approach we take, we should be prepared to invest significant resources over a long period of time. The cost of implementing a 21st century health IT system in the U.S. will be measured in billions of dollars, not millions. But I, for one, believe it will pay off handsomely for patients, doctors, employers, insurers and all the other key stakeholders in the American health care system.

Mr. Chairman, thank you again for the opportunity to appear before you today. I am happy to answer any questions you may have.

Mr. BILIRAKIS. Thank you so very much, Dr. Blumenthal.

Dr. Diamond?

STATEMENT OF CAROL DIAMOND

Ms. DIAMOND. Thank you, Mr. Chairman and other distinguished—well, there are no other distinguished members here. Thank you for having me here today. For the last few years, I have had the privilege of Chairing the committee, the Connecting for Health initiative, which is an initiative of the Markle Foundation. We operate and fund Connecting for Health and receive additional support from the Robert Wood Johnson Foundation. Connecting for Health is really a truly unique public-private collaborative. It involves over 100 leaders from health care. They are broad-based and multi-stakeholder-based. They include physicians, consumer organizations, privacy advocates, the vendors of systems, hospital representatives, employers, payers, accreditors and government agencies.

For the last few years, we have rallied around tackling some of the barriers that stand in the way of information technology being more widely adopted, and as we have heard many times today, this is a vital agenda to improve health care quality, reduce medical error and lower the costs, as well as empower patients.

I am delighted to inform you on some of the progress that we have made most recently. As you heard, momentum is growing, and much good work is underway, but while progress has been made, we have a lot to still accomplish. It is important to keep in mind that the real difficulties that patients face every day in an uncoordinated paper-based system are very significant.

As our report describes, there is no more compelling description of the gaps in information than the stories as described by the patients themselves and their families who use the health care system. Patients and families who know how important their medical information is to receiving the best possible care often feel like human medical records, carrying around records for their children each time information for life-changing decisions are made and each time treatment decisions are being decided upon. They, of course, cannot be expected to carry around their medical records, and we must do better.

As I am sure the committee knows, modernizing the health care system is fraught with challenges. They are technical, financial and policy related. Many of these challenges do not have easy answers, and the industry has grappled with many of them for more than a decade. And I want to emphasize that grappling with some of the

challenges in IT is really the reason, I think we heard multiple times today, that this has been a very slow agenda. The call to action and the call for the adoption of IT is at least a decade old, maybe more, and yet it hasn't happened, and I think it has forced us to look very carefully at what the barriers are.

Last week, we released a report, which we submitted here too, called, "A preliminary Road Map for Achieving Electronic Connectivity." And the report grew from the impatience and the desire of some of the Nation's most foremost health care leaders to chart a path forward. Our report offers clarity about how to efficiently create a decentralized standards-based network that is effective for health care and effective for patients. I want to emphasize that the path forward did not start with agreement. We worked hard in the process to come out with a series of recommendations and next steps that are near term and specific.

The key recommendations represent agreement by our group as well as the input of some of the best minds in the country on health care and information technology. And they fall into three categories. The first is creating a technical framework for connectivity. We do not want silo'd information systems. In order to provide a majority of their benefits, electronic records must connect with other clinical systems—pharmacies, laboratories, hospitals and other doctors. The potential to avoid medical errors and drug interactions and to deliver real-time prompts and reminders, both to patients and physicians, depends on having a highly connected network that exchanges data between clinical systems, such as personal health records. Unless we pay attention to the requirements at the local, regional and national level, it is unlikely that piecemeal technology adoption will result in the connected network necessary to realize the quality gains in health care, and it has not to date.

This network requires connectivity that will arise from trust, safeguards for privacy and security, a strategy that minimizes risks of patient data misuse. We believe the approach has to be built on the premise of patient control and authorization. It must conform to a common set of open standards for information flow and consist of a decentralized network of networks that is built on the Internet. And we also believe it can and should be done without a national health ID.

Second, we have some recommendations in the area of financial barriers. As has just been stated, the current system does not provide incentives for the investment in high-quality health care that would be achieved through interoperable information systems, and therefore incentives need to be realigned. We think that the realignment of these incentives to promote health care quality can only be achieved through the adoption of applications that are capable of exchanging information based on standards. Incentives should include IT adoption with supportive interoperability among data sources outside of the physician's office and with an emphasis on interoperability. We think without this we will not achieve the quality gains in health care.

I do want to emphasize that in the earlier discussion the comment was made that IT can produce a better product, yet the system we have is piecemeal and volume-based in its incentive model,

and therefore investing in systems that allow us to reduce unnecessary doctor visits or that require us to spend a lot of time looking for medical records are not in the interest of the way the current incentive model works, and I think that they do go unattended.

Finally, our recommendations are in the area of engaging the American public. Our own research has found that members of the public do not fully understand this problem that we are trying to solve. While they understand the inefficiencies in the system, they are not aware that information technology can help to solve it. However, they are very interested in having access to their medical record and being able to email their physicians and being able to see their own medical records and their laboratory tests online, from home. So we encourage the path forward to include a set of strategies that engages the public in this agenda. The electronic personal health record is an essential tool for integrating the delivery of care and putting each patient at the center of this model.

So while we do not offer a prescription for which innovations will be most effective, we do know that most of them cannot be realized without the rapid, accurate and secure exchange of personal health information among authorized users. And we believe that the greatest improvements in health care leading to the most profound opportunities will occur when Americans can access and control and see their medical records in partnership with their care team. Thank you.

[The prepared statement of Carol Diamond follows:]

PREPARED STATEMENT OF CAROLD DIAMOND, MANAGING DIRECTOR, MARKLE FOUNDATION; CHAIR, CONNECTING FOR HEALTH

Chairman Bilirakis, Congressman Brown and distinguished members of the Subcommittee on Health, thank you for inviting me to meet with you today.

For the last two years, I have had the privilege of chairing Connecting for Health (see www.connectingforhealth.org), an initiative established and operated by the Markle Foundation, with additional funding and support from the Robert Wood Johnson Foundation. Connecting for Health is committed to accelerating actions on a national basis to tackle the barriers that prevent us from bringing healthcare into the information age to improve the quality of healthcare, reduce medical errors, lower costs and empower patients.

Connecting for Health is based on the belief that the development of an interconnected health information infrastructure will depend upon close cooperation between the public and private sectors in a way that maximizes the benefits of their complementary expertise and experience. Today, Connecting for Health is a truly unique *public-private sector initiative,* consisting of over 100 broad-based stakeholders representing providers, patients, payers, accreditors, government agencies, researchers and healthcare information systems manufacturers and vendors (see the appendix for the list of current Steering and Working Group members). I am delighted to have this opportunity to inform this Committee on progress made within the context of Connecting for Health and on what we believe the conditions to be to accelerate the adoption and use of Information Technology to improve the quality of health care in the United States.

Momentum is growing . . .

Last year, this Committee showed true leadership by introducing groundbreaking and innovative Health Information Technology initiatives in the Medicare Modernization Act including a process to create standards for electronic prescribing that physicians and pharmacists can use; the development of a safe harbor in the Stark and Anti-Kickback Acts that would allow hospitals to disseminate technology to physicians; the authorization of various grants to accelerate e-prescribing; the development of a chronic care improvement program that will test disease management strategies and the call for the use of monitoring technologies to exchange clinical information (among other things).

In addition to the work in this Committee, other notable recent developments include: the President's call for the creation of electronic health records for all Americans in ten years; the establishment by the Department of Health and Human Services of the National Health Information Technology Coordinator and the appointment of Dr. David Brailer to the position; the release announced by Dr. Brailer of the report on the nation's first strategic framework to develop electronic health records; the various legislative bills proposed and introduced by Senator Ted Kennedy, Senator Hilary Rodham Clinton and Representative Nancy Johnson, Senator Judd Gregg, among others; and the creation of a "21st Century Healthcare Caucus" within the House of Representatives focused on IT and Healthcare (of which some members of this Committee are part of), all showing a bipartisan recognition of the importance of addressing these issues promptly. Furthermore, the Defense Department and the Veterans Administration have been building and implementing very sophisticated health IT systems. HHS agencies, including the CDC, CMS, AHRQ, the Health Resources and Services Administration and others are conducting demonstration projects, grant programs and other developmental activities.

This momentum is a result of the growing understanding and evidence, produced by various studies, groups and pilot projects, that smart investments in health care information technology can rein in costs, eliminate waste and improve patient safety and health care quality

However, while progress has been made, we have not yet accomplished all that we need to. It is important to keep in mind the real and constant difficulties patients face in today's uncoordinated, paper-based system. Every one of us is touched by the U.S. health system—from before birth until death. During our lives, we experience both predictable and unpredictable needs for health care assistance. Every time we encounter the healthcare system, information about our background, medical history, health status, and insurance are immediately required. And every medical encounter produces its own trail of documentation.

The stakes are high . . .

There are hundreds of millions of doctor office visits alone every year in the United States. A complex patchwork of healthcare practitioners and payers process information for each one of those visits. The records are either on paper or in separate computer systems that typically have limited, if any, ability to exchange data electronically (except for purposes of reimbursement). In all those files of paper and streams of data, no one has a bigger stake in the information from a particular clinical encounter than the patient who needed it. And, in nearly all circumstances, no one in the system can know more about the patient's life than that patient. Health professionals have no way of accessing all of the important information about our health, and we have no way of compiling and managing the information about ourselves.

In our fragmented and pluralistic delivery system, the electronic personal health record is an essential tool for integrating the delivery of health care and putting each patient at the center of their care. It can support the shift from episodic and acute care toward continuous healing relationships with physicians and healthcare professionals. It represents a transition from a patient record that is physician-centered, retrospective and incomplete to one that is patient-centered, prospective, interactive and complete.

Throughout the course of our work a number of individuals have agreed to share their stories with us, and in our attempt to bring the private and public sectors together we have explored the deficiencies of our paper-based healthcare system through these real-life stories (a selection of testimonies is available at our website, www.connectingforhealth.org). For instance, a Michigan father and his young daughter, who has a rare and complicated leukemia, told us about the pile of files he has to carry every time he joins his daughter to see a specialist, fearing that she would not get the best care without every clinician understanding the complexities of her disease or knowing what worked best for her in the past. His story is supplemented by the stories of other patients who went out of their way to have access to their medical information, and use it to receive the best possible care for themselves and their families. These stories remind us how patients and their families struggle to overcome preventable information gaps in healthcare each and every day. They have made us even more determined to break open the logjam blocking the flow of vital healthcare information, which is required to improve healthcare quality, safety, and efficiency.

Connecting for Health's Preliminary Roadmap

Since its creation, Connecting for Health has demonstrated that blending together the knowledge and experience of the public and private sectors can provide a highly

effective formula for progress. Early in its inception, Connecting for Health led the national debate on electronic clinical data standards. The group drove consensus on the adoption of an initial set of standards, developed case studies on privacy and security, and helped define the electronic personal health record.

While we do not offer a prescription for which innovations in care will be most effective in improving healthcare quality or reducing medical error, we do know that most of them cannot be realized without the rapid, accurate, and secure exchange of personal health information among authorized users. And we believe that the greatest improvements in healthcare—leading to the most profound opportunities for better health—will occur when each American can access, control, and make use of their own health information in partnership with their care team.

Just last week, Connecting for Health released its second report: a *Preliminary Roadmap for Achieving Electronic Connectivity in Healthcare* (available at http://www.connectingforhealth.org/resources/cfh_roadmap_final_0714.pdf). The report aims to facilitate broad agreement on a set of immediate actions that can be taken by all healthcare stakeholders over the next several years in order to efficiently create a decentralized and standards-based network that is effective for healthcare and patients.

Our report is meant to build a realistic path forward and we do not call for wholescale revision to the current system. Such an approach would be dangerously disruptive and prohibitively expensive. Instead we have brought a diverse group of stakeholders together to offer an incremental path forward that builds on two important concepts.

First, we accept, with appreciation, the good work already done in developing specific electronic health record (EHR) and personal health record (PHR) applications. Medication management tools are offered by pharmacies and pharmacy benefit managers; chronic disease tools are optimized for congestive heart failure or diabetes sufferers; secure e-mail and results reporting systems are being integrated with both hospital and ambulatory EHRs. Connecting for Health does not say that one approach is right and another wrong, but that the national infrastructure must support and accommodate connectivity among all of these—and that they must all conform to a small set of common principles, including use of an agreed upon set of standards. This goal manifests in our recommendation for creating a technical framework that is required to take our fragmented healthcare system and make investments that can lead to a more integrated, high quality patient care experience.

Second, the model we envision allows individuals and their authorized health professionals to construct the health record appropriate to their needs exactly when and how it is needed. The most innovative aspect the Preliminary Roadmap is the recommendations on how to develop a national health infrastructure through the creation of a "network of networks," based on open standards, which can be created without a central database of health records or a National Health ID—both longtime barriers that have prevented bringing the benefits of information technology to the field of healthcare.

In order to be accepted by patients and providers, the network must safeguard the privacy of health information. Among the important implications of our proposed system for a network of networks, is that personal health information would continue to reside where it does now, primarily with hospitals and healthcare providers. According to the patient's preferences, relevant health data could be assembled from numerous sources at the point of care, enabling decision making to be informed by past treatment successes and failures and medication history. Both the patient and the clinician could have direct access to this vital information.

The secure and confidential treatment of patient information is a fundamental design criterion of the health information infrastructure we endorse. We recommend the inclusion of architectural, technical, and policy safeguards within the "Common Framework," to safeguard the privacy and security of patient data while at the same time permitting the rapid and accurate exchange of information among authorized users. Proposed steps for safeguarding privacy and security are embedded in the fabric of all of the Preliminary Roadmap recommendation areas.

Information about an individual's health is usually stored in many different places by a variety of healthcare providers. According to the system we propose, information would be accessible only to authorized users and aggregated at the individual patient level when and where it is needed. This would preclude the need to create large central stores of information.

Regardless, a set of standards and secure networks would allow information such as lab results, x-rays and medical history as well as clinical guidelines, drug labeling and current research findings to move where it is needed, immediately and securely. Regardless of where a beneficiary is receiving care, health information exchange networks would allow for information about medication history and poten-

tially serious drug interactions to be available in real-time, along with out of pocket costs and therapeutic alternatives, before the physician transmits a prescription to a pharmacy.

Key Recommendations

The key recommendations fall into three broad categories:

- **Creating a Technical Framework for Connectivity:** A non-proprietary "network of networks" built on the Internet is essential to support the rapid acceleration of electronic connectivity that will enable the flow of information to support patient care. Such a network should be based on a "Common Framework." Only by conforming to a "Common Framework" can we ensure that data exchange pilots, personal health records, and regional systems will be able to interoperate across and with other regional systems. The network should be decentralized, based on interoperable standards, define standards for secure Internet transport, safeguard patient privacy and be built incrementally, without the use of a unique National Health ID or a centralized database of records.
- **Addressing Financial Barriers:** The current system does not provide incentives for the investment in high-quality healthcare achieved through interoperable information systems, and therefore incentives need to be redirected. Financial and other incentives and related processes must be designed to promote improvements in healthcare quality through the adoption of clinical applications and information exchange based on standards.
- **Engaging the American Public:** The public must be informed with a consistent set of messages to be used by government, healthcare, and consumer leaders to promote how patients can improve their own health and healthcare through the benefits of electronic connectivity and to encourage patients and consumers to access their own health information.

1. Creating a Technical Framework for Connectivity

In order to provide a majority of their benefits, clinical applications must interconnect with other clinical systems. The potential to avoid medical errors and drug interactions, to deliver real-time prompts and reminders at the point of care and directly to the patient or caregiver, and to improve the ability to conduct clinical research depend on a highly connected network of regional healthcare communities that exchange data between effectively used clinical systems such as personal health records.

Unless there is purposeful attention paid to infrastructure requirements at the local, regional and national level, it is unlikely that piecemeal technology adoption will result in the connected infrastructure necessary to realize the quality of care and economic efficiency gains promised by IT. The network requires a high degree of connectivity that arises from trust, safeguards for privacy and security and a strategy that minimizes risks of patient data misuse. With that said, the approach must be voluntary and built on the premise of patient control and authorization.

In order to accelerate electronic connectivity, a non-proprietary "*network of networks*" built on the Internet that is based on standards and a decentralized and federated architecture should be developed, building upon local and regional networks. In addition, our proposed network is designed to be flexible to accommodate the various electronic health record (EHR) and personal health record (PHR) models that are already being developed. And in order to support the creation of the network where national standards are implemented locally and regionally, we have determined that a "*Common Framework*" is needed.

This "*Common Framework*" is comprised of standards, policies and methodologies that can be replicated quickly to ensure connectivity, reliable authentication; it would also include a minimum suite of standards that work together to support information exchange. We recommend that the common framework be tested and evaluated through a "*reference implementation or pilot project*" within the next 12 months. Because our incremental approach is designed to leverage existing infrastructure, it dictates that secure connectivity be built on the Internet and its communication protocols.

2. Addressing Financial Barriers

Among the most often cited barriers to the adoption of information technology in healthcare are misaligned financial incentives. Because of the way the payment system is structured, for many providers, especially in the small practice primary care setting, the acquisition or use of IT results in a net financial loss. Ambulatory care practices are on the front line for the treatment of patients in the United States today, specifically the chronically ill, yet have the lowest adoption rates of healthcare IT. One of the main reasons physicians and hospitals are not adopting

clinical information technology at a rapid rate is due to the poor financial case. Despite these financial barriers, however, the promise of EHRs and other clinical information technology remain formidable. As several studies have shown, EHRs can advance the quality and efficiency of care, resulting in reduced medical errors, reduced utilization, and improved ability to manage chronic disease, the improved longevity and health status, among other potential benefits.

This gap between the potential of clinical information technology and the willingness to adopt these technologies raises the question of whether the market appropriately supports technology purchasers in society's efforts to realize value.

We recommend that incentives for IT—including applications, electronic connectivity and information exchange—include the requirement of use of standards and *interoperability,* since the majority of the benefits of IT accrue only when systems can talk to each other. Failure to encourage interoperability could lead to the growth of technologically sophisticated islands or silos of information, which would decrease the potential value of the investment in IT dramatically.

Our recommendations include the results of our insights regarding the level of incentives that would require "tilt" or cause significant change in the number of small and ambulatory private practices that begin to adopt electronic health records as a result.

3. Engaging the American Public

Our own research found that most members of the public do not fully understand the problem we are trying to solve. Many are unaware, except for a general perception that costs are high, of the inadequacy of our healthcare system, and the high volume of medical errors. In addition, the majority of Americans assume that their doctors use information technology far more than is actually the case. In fact, according to our own survey, more than half believe their own doctors are far more "wired" than is actually the case. Given these gaps in knowledge, it is not surprising that most people have not thought about how better use of technology within the system might improve healthcare quality.

Our research further shows that most patients or consumers have not fully conceived how they could benefit from *their own* access to and control of personal health information. This is in part because patients are in general used to being somewhat peripheral players in the traditional pattern of care. Many assume that their care is primarily the responsibility of the professionals. However, our research indicates that the vast majority of patients, when presented with a description of services that would enable them to participate more fully and conveniently in self-care, such as the ability to view test results or e-mail doctors directly, show a significant level of interest. We believe that it is essential to increase public awareness of the avoidable problems with healthcare delivery and of the potential of technology, and therefore recommend a large public education effort towards that end.

In order to support implementation of its recommendations, Connecting for Health will release a final version of the Roadmap and detailed reports by individual Working Groups that contributed to it by September. The final Roadmap will provide additional detailed recommendations for action and commitments from Connecting for Health's Steering Group members, and I would be delighted to share these with the members of this Committee in due course.

Finally: Robert Frost famously finished his poem, "The Road Not Taken," by writing that he chose the road "less traveled by,/And that has made all the difference." We believe that the Connecting for Health Collaborative is, in its own way, also on a journey. We invite all stakeholders in healthcare to examine the choices presented in this *Preliminary Roadmap* and then join with us, on behalf of those whose lives and health are at stake, in finding those paths that will make the greatest positive difference.

The steps forward described in the Connecting for Health Preliminary Roadmap will permit such innovations in care and patient engagement to occur. We believe that they will allow clinicians, entrepreneurs, and families to develop new and better ways to deliver services, to monitor health, and to manage care. They will also enhance the quality of research and public health. A system that provides an abundance of complete, reliable information to the point of care—and to the home—can reduce waste, error, and frustration while improving diagnostic accuracy, the quality of communications, and even the ability of family members to care for each other.

Thank you. I will be pleased to try to answer any questions members may wish to ask.

APPENDIX : CONNECTING FOR HEALTH, STEERING GROUP PARTICIPANTS

STEERING GROUP LEADERS

Carol Diamond, MD, MPH, Managing Director, Health, Markle Foundation; Daniel Garrett, Vice President and Managing Director of Computer Sciences Corporation's Global Health Solutions Practice; John R. Lumpkin, MD, MPH, Senior Vice President, Robert Wood Johnson Foundation and Chair, National Committee on Vital and Health Statistics; Janet M. Marchibroda, Executive Officer of the eHealth Initiative and the Foundation for eHealth Initiative; and Herbert Pardes, MD, President and CEO, New York-Presbyterian Hospital

STEERING GROUP MEMBERS

James Bradley, Chief Executive Officer, RxHub; Claire Broome, MD, Sr. Advisor, Integrated Health Information Systems, Centers for Disease Control and Prevention; Gwendolyn A. Brown, Director, Healthcare Policy, EDS, Global Government Affairs; Nancy Brown, Senior Vice President of Strategic Planning, McKesson Corporation; Garry Carneal, President and Chief Executive Officer, URAC; Gary Christopherson, Senior Advisor to the Under Secretary, Veterans Health Administration, Department of Veterans Affairs; Carolyn Clancy, MD, Director, Agency for Healthcare Research and Quality; Nathaniel Clarke, MD, Medical Director, American Diabetes Association; Richard A. Correll, President, College of Healthcare Information Management Executives; Janet Corrigan, PhD, Division Director, Institute of Medicine; Molly J. Coye, MD, MPH, Chief Executive Officer and Founder, Health Technology Center; Kelly Cronin, Executive Director, Council on the Application of Health Information Technology, Department of Health and Human Services; Mike Cummins, Chief Information Officer, VHA Inc.; Francois de Brantes, Program Leader, Healthcare Initiatives, General Electric Corporation; Mary Jo Deering, PhD, Special Expert for Informatics Dissemination and Coordination, U. S. Department of Health and Human Services; Carol Diamond, MD, MPH, Managing Director, Health, Markle Foundation; Robert Dickler, Sr. VP Division of Healthcare Affairs, Association of American Medical Colleges; Craig Fuller, Chief Executive Officer, National Association Of Chain Drug Stores; Daniel Garrett, Vice President, Managing Partner, Global Healthcare Leader, Computer Sciences Corporation; Peter Geerlofs, MD, Chief Medical Officer, Allscripts Healthcare Solutions; John Glaser, PhD, Vice President and Chief Information Officer, Partners Healthcare System, Chair, Working Group on Financial, Organizational and Legal Sustainability; Paul Gorup, Vice President and Co-Founder, Cerner Corporation; John Halamka, MD, Chief Information Officer, CareGroup Healthcare System; Chief Information Officer, Harvard Medical School; W. Edward Hammond, PhD, Professor, Community and Family Medicine Duke University; Linda Harris, PhD, Senior Health Communication Scientist, National Cancer Institute; C. Martin Harris, MD, Chief Information Officer, Cleveland Clinic; Douglas Henley, MD, Executive Vice President, American Academy of Family Physicians; Joseph Heyman, MD, Trustee, American Medical Association, American Medical Association; Yin Ho, MD, Director eBusiness, Pfizer, Inc; Kevin Hutchinson, Chief Executive Officer, SureScripts; Michael Jackman, Chief Technology Officer Health Imaging Group, Eastman Kodak Company; William F. Jessee, MD, President and Chief Executive Officer Medical Group Management Association; Brian Keaton, MD, FACEP, Attending Physician/EM Informatics Director and Summa Health System, Board Member, American College of Emergency Physicians; Kenneth W. Kizer, MD, MPH, President and Chief Executive Officer, National Quality Forum; Linda Kloss, Executive Vice President and Chief Executive Officer American Health Information Management Association; David Lansky, PhD, President, Foundation for Accountability; Chair, Working Group on Policies for Electronic Information Sharing Between Doctors and Patients; Mark Leavitt, MD, PhD, FHIMSS, Medical Director and Director of Ambulatory Care, Health Care Information and Management Systems Society; Randy Levin, MD, Associate Director for Electronic Submissions Food and Drug Administration; Jack Lewin, MD, President, California Medical Association; Stephen Lieber, President, Healthcare Information and Management Systems Society; Donald Lindberg, MD, Director, National Library of Medicine; John R. Lumpkin, MD, MPH, Sr. Vice President, Director, Healthcare Group, Robert Wood Johnson Foundation and Chair, National Committee Vital and Health Statistics; Janet M. Marchibroda, Executive Director, Foundation for eHealth Initiative; Chief Executive Officer, eHealth Initiative; Clement McDonald, MD, Director of Regenstrief Institute; Distinguished Professor of Medicine, Indiana University School of Medicine; Arnold Milstein, MD, MPH, Medical Director, Pacific Business Group on Health, The Leapfrog Group; Thomas Murray, PhD, President, The Hastings Center; Margaret O'Kane, President, National Committee for Quality

Assurance; Dennis S. O'Leary, MD, President, Joint Commission on Accreditation of Healthcare Organizations; J. Marc Overhage, MD, PhD, Associate Professor of Medicine, Indiana University of Medicine Senior Investigator, Regenstrief Institute; Herbert Pardes, MD, Chief Executive Officer, New York-Presbyterian Hospitals, University Hospitals of Columbia and Cornell; James Reardon, Chief Information Officer, Tricare Management Activity, Department of Defense; Russell J. Ricci, MD, Chief Medical and Strategy Officer, HealthSTAR Communications; Craig Richardson, Vice President Health Care Connectivity and Alliances, Johnson & Johnson Pharmaceutical Services; Wes Rishel, Vice President, Gartner Research; William Rollow, MD, Deputy Director, Quality Improvement Group Office of Clinical Standards and Quality Centers for Medicare and Medicaid Services; James Schuping, Vice President, Workgroup for Electronic Data Interchange; Clay Shirky, Adjunct Professor, NYU Interactive Telecommunications Program, Chair, Working Group on Accurately Linking Health Information; Steve Skerry , Vice President Interoperability, IDX Systems Corporation; Steve Sleigh, PhD, Director Strategic Resources, International Association of Machine and Aerospace Workers; Ellen Stovall, President, National Coalition for Cancer Survivorship; Thomas Sullivan, MD, Past President, Massachusetts Medical Society, Women's Health Center Cardiology; Paul Tang, MD, Chief Medical Information Officer, Palo Alto Medical Foundation; Robin Thomashauer, Executive Director, Council for Affordable Quality Healthcare; John Tooker, MD, MBA, FACP, Executive Vice President American College of Physicians; Scott Wallace, President and Chief Executive Officer, The National Alliance for Health Information Technology; Andrew Wiesenthal, MD, Associate Executive Director, The Permanente Federation; Robert B. Williams, MD, MIS, Partner Healthcare, IBM Business Consulting Services; William Yasnoff, MD, PhD, Senior Advisor, National Health Information Infrastructure Department of Health and Human Services, Office of Assistant Secretary for Planning and Evaluation; and Jon Zimmerman, Vice President, Health Connections, Siemens Health Services

Mr. BILIRAKIS. Thank you, Doctor. Doctor Shortliffe, please. Is that correct? Am I——

Mr. SHORTLIFFE. Yes.

Mr. BILIRAKIS. Shortliffe.

STATEMENT OF EDWARD H. SHORTLIFFE

Mr. SHORTLIFFE. Thank you very much. I come to you both as a physician who has taught and practiced in academic hospitals and clinics and as a biomedical computer scientist with extensive experience in the design and the development and the implementation of clinical information systems. So I really do bridge these two fields we are talking about today, as does Dr. Kolodner.

Those of us who have worked with health care information technology are really pleased by the recent attention, such as today's hearings, that have been directed at this topic, and Secretary Thompson's enthusiasm. The unfulfilled promise of information technology in support of health and health care has been really clear to some of us for many years, more years, maybe even more than 10 that Dr. Diamond mentioned. Some of us have been doing this 30 years and have felt strongly about this subject that long. And we have been dismayed to see a widening gap, if anything, between the implementation of information technology solutions to pressing problems in other segments of society when you contrast that with their limited penetration in health care settings.

On the other hand, a variety of factors have recently combined to heighten our awareness of what is possible and of the need for active intervention and promotion of solutions. And I know I speak for others in the health care computing community when I say that we are grateful for the recognition recently and we are eager to help in any way that we can. Seldom have I seen more consensus on the need for action and the promise that awaits us if we do this

right. But, as always, the devil is in the details, and that is the challenge faced by all groups with a stake in enhancing the use of information technology in health care, including the Congress as it considers the role that it might play.

Now, there are so many things one could talk about, and in my brief time I guessed what my colleagues would say since I knew I was coming last and we in this small community do know each other well. So I decided that I would highlight for you the perspective of the individual physician who practices in this country. I recognize that they are an important element in any solution that we propose but that their ability to participate effectively is highly constrained. So I am going to put on a physician's hat for a moment, set aside my activist interests as a health computing professional, and I believe that there are a variety of important issues that really need to be understood and considered in formulating any incentive programs or implementation plans for health care IT.

And by way of anecdote, I, as a health computer scientist working on a medical school faculty, scratched my head for many years trying to understand how it was that I could be working on the cutting edge of research on health care computing for 70 or 80 percent of my time and then for the other 20 percent enjoined to the clinic or to the in-patient hospital wards of one of the best hospitals in the United States where the computing support was vastly different from what I knew was possible and what I had available to me in my research laboratory, trying to understand this disconnect and why it was so hard to bring what was possible into settings such as that.

Well, first, bear in the mind that the vast majority of health care in this country is provided by physicians in ambulatory settings and most commonly in relatively small offices, not in medical schools and VA hospitals. Our view of what is needed cannot be overly skewed by the perspectives of those who practice in large multispecialty practices or in clinics associated with academic medical centers. Although well-implemented IT in a single institution can provide major quality and cost benefits for that entity, as it has for the VA as a whole, it is in the integrated penetration of health care IT throughout essentially all practice settings that the Nation's health stands to gain the most.

And this means creating an infrastructure, both regional and national, into which all practice settings can tie, but also helping the individual practices that need to tie into that infrastructure to make wise decisions and investments. Now, I believe it is really too easy to simply say that physicians are resistant to change or overly committed to antiquated approaches to data management. We see many examples, in fact, where clinicians have embraced new technologies rather quickly. But information technology presents some special problems for practitioners.

It is not their way of expertise, and they are really uncertain how to evaluate the options that are provided to them. It is not a part of their education. That is something we could address. And it seems foreign to the major thrust of their professional interests. System implementations are often disruptive to operations, at least in transition, and too often the physicians find that major investments have resulted in inadequate system solutions that fail to

meet their expectations, they integrate poorly with the other systems they happen to have in their offices, they are difficult to adapt to the special needs of a particular practice.

Many physicians tell me that they have no innate objection to electronic medical records, the decision support software or other aspects of office automation, but they don't know where to start and they are not sure they can justify the expense with the benefits that are gained by them. There is no certification process, for example, although the Secretary addressed this issue, that allows them to be sure that a product that is offered is compliant with the emerging national standards for connectivity, for data storage and exchange, for privacy and for security. Indeed, such standards are still evolving, and there is as yet no coherent and well accepted process for bringing such standards to a broad consensus that allows all stakeholders to adopt and comply with them.

Consultants often seem as confused, frankly, by the options as the physicians are. This is not an area where you can just get a consultant and expect to have a good result. There are expensive failures of recommended systems that are legendary, and it is small wonder that clinicians are looking elsewhere for assistance.

In addition, the arguments for implementation of health care IT are too often viewed by clinicians as being primarily directed at health systems and payers and patients with much less direct benefit appreciated by the physicians themselves. They understandably ask why in a financial environment that is characterized by significant regulatory and reimbursement challenges for physicians in practice that doctors should be asked to invest in medical records systems whose primary systemic beneficiaries are elsewhere than in their offices. This misalignment of fiscal incentives is often cited as a major barrier to widespread dissemination of information technology in the practice settings where, ironically, the primary data are being gathered and where decision support capabilities could most beneficially be utilized.

Solutions need to recognize that physician offices are not only sources of key information that we want centrally—the payers, the health policy makers, the researchers, the large institutions—but that those offices are vitally important users of information, that a robust information infrastructure could be delivering back to them directly to their practice settings rural, suburban, inner city, academic, across all that spectrum. When physicians experience clear benefits from their IT investments and see efficiencies and cost savings as well as enhancements to information access, then a major barrier to suitable investments will have been overcome.

The problems being discussed today and the exciting opportunities that will accompany their solution are clearly much broader than the single issue of how best to distribute information technologies in individual practices. I mean hospitals and other topics are equally as important. Yet when we focus on physicians, I believe there are several steps that Federal agencies could take in facilitating solutions to the issues I have identified, and many of these in fact were addressed in Secretary Thompson's remarks.

First, there has to be a suitable alignment of the financial incentives so that those who most benefit from the investment in health care IT are the ones who are expected to invest most heavily in its

dissemination and implementation. Second, federally facilitated programs to enhance the process for setting and adopting standards, which needs to be a shared public-private effort, are sorely needed. And this too was addressed in yesterday's summit. Third, a mechanism for assuring rigorous certification of vendor-provided solutions is required so that the individual purchasers, these doctors in offices, for example, can be assured that a given product is compliant with the emerging requirements of a national health information infrastructure. And, fourth, we have to recognize that expertise in health care information technology is more than expertise in information technology itself. And many of the people who build the systems that are used by doctors today are experts in information technology but know nothing about the culture and the practice of medicine or are brought to it as a secondary activity much later in their careers.

So there is an important unique discipline at the intersection of health care and computer systems, and we need to nurture the training of experts who can be the researchers and the designers and the developers and the implementers and the evaluators of health information technology in the future.

So I am pleased to have had an opportunity to share some of these thoughts with you today, and I am sure I and all the others on the panel would be happy to answer any questions you have.

[The prepared statement of Edward H. Shortliffe follows:]

PREPARED STATEMENT OF EDWARD H. SHORTLIFFE, DEPUTY VICE PRESIDENT FOR STRATEGIC INFORMATION RESOURCES, PROFESSOR AND CHAIR, DEPARTMENT OF BIOMEDICAL INFORMATICS, PROFESSOR OF MEDICINE AND OF COMPUTER SCIENCE, DIRECTOR OF MEDICAL INFORMATICS SERVICES, NEWYORK-PRESBYTERIAN HOSPITAL, COLUMBIA UNIVERSITY MEDICAL CENTER

I would like to thank Chairman Bilirakis, Representatives Barton and Dingell, and the other members of the Subcommittee on Health for this opportunity to address you regarding Health Information Technology and the role that the federal government can play in facilitating its efficient and effective deployment in this country. I come to you both as a physician who has taught and practiced in academic hospitals and clinics and as a biomedical computer scientist with extensive experience in the design, development, and implementation of clinical information systems. A fellow of the American College of Medical Informatics, I have served on the Board of Regents of the American College of Physicians and on a variety of government advisory groups, including the President's Information Technology Advisory Committee and the National Committee for Vital and Health Statistics. After spending 30 years at Stanford University, I currently am at Columbia University's medical school where I chair a department of biomedical informatics. Our faculty members have built, and continue to be responsible for, the management of a variety of successful and heavily used clinical systems at the NewYork Presbyterian Hospital.

Those of us who have worked with health care information technology are pleased by the recent attention that has been directed at this topic, both within government and in the private sector. The unfulfilled promise of information technology in support of health and health care has been clear to some of us for many years, and those in the field have often been dismayed to see a widening gap between the implementation of information technology solutions to pressing problems in other segments of society contrasted with their limited penetration into health care settings. On the other hand, a variety of factors have recently combined to heighten our awareness of what is possible and of the need for active intervention and promotion of solutions. I know I speak for others in the health care computing community when I say that we are grateful for that recognition and eager to help in any way that we can.

As I reflect on the past five years, I see a number of forces that have come together to create the current enthusiasm for health information technology solutions. Simply stated, these are safety and quality, costs, and privacy. Although the health care community has long been concerned with all three of these issues, certain re-

cent landmarks events greatly broadened our awareness of their dependence on information technology solutions:

- A series of three influential reports from the Institute of Medicine ("To Err is Human," "Crossing the Quality Chasm," and "Patient Safety: Achieving a New Standard of Care"), all of which made strong cases for the role of IT in addressing problems with medical errors and enhancing patient safety
- Federal advisory activities, including seminal contributions from the Workgroup on the Health Information Infrastructure from the National Committee on Vital and Health Statistics (NCVHS) and two important sets of recommendations (first in 2001, then again this year) from the subcommittees on health within the President's Information Technology Advisory Committee (PITAC)
- Employer concerns regarding the burgeoning costs of health care, leading to the creation of the Leapfrog Group and its active promotion of more effective implementation and use of information technology in health care settings
- The privacy, security, and transaction rules that were announced by DHHS in response to the requirements of the 1996 Health Insurance Portability and Accountability Act (HIPAA) and that in many respects require informed technological solutions in order to be compliant
- The influence of the Internet and the World Wide Web, which has greatly increased the access to health information by the public and transformed their familiarity with, and expectations of, health information technology in the settings where they seek care.

The list could be much longer, and would certainly include the large number of recent reports, from a variety of public and private sources, that reiterate and refine the recommendations that have come before. Seldom have I seen more consensus on the need for action and the promise that awaits us if we do this right.

But, as always, the devil is in the details, and that is the challenge faced by all groups with a stake in enhancing the use of information technology in health care: Dr. Brailer in his new role as National Health Information Technology Coordinator, hospitals and other provider organizations, payers, and individual health professionals. I realize that the Congress is particularly concerned with what role the federal government can and should play in encouraging more effective and efficient implementation and use of the technologies that we discuss today. My colleagues on this panel will have addressed this issue in some detail, illuminating for you both the promise and the challenges that face us and the opportunities for effective federal and other governmental action.

I would like to highlight the perspective of the individual physician who practices in this country, recognizing that they are an important element in any solution that we propose but that their ability to participate effectively is highly constrained. If I may, then, don my physician's hat for a moment, setting aside my activist interests as a health computing professional, I believe that there a variety of important issues that need to be understood and considered in formulating any incentive programs or implementation plans for health care IT. Recommendations for federal action follow in part from these observations.

First bear in mind that the vast majority of health care in this country is provided by physicians in ambulatory settings, and most commonly in relatively small offices. Our view of what is needed cannot be overly skewed by the perspectives of those who practice in large, multispecialty practices or in clinics associated with academic medical centers. Although well implemented IT in a single institution can provide major quality and cost benefits for that entity, it is in the integrated penetration of health care IT throughout essentially all practice settings that the nation's health stands to gain the most. This means creating an infrastructure, both regional and national, into which all practice settings can tie, but also helping the individual practices to make wise decisions and investments.

Viewed from the perspective of a clinician in a small office, the issues we discuss today are overwhelming in many respects. It is too easy to say that physicians are simply resistant to change or overly committed to antiquated approaches to data management. We see many examples, in fact, where clinicians have embraced new technologies rather quickly. But information technology presents some special problems for practitioners. It is not their area of expertise, and they are uncertain how to evaluate the options that are provided to them. It is not a part of their education, and seems foreign to the major thrusts of their professional interests. System implementations are often disruptive to office operations, at least in transition, and too often physicians find that major investments have resulted in inadequate systems solutions that fail to meet expectations, integrate poorly with other systems, or are difficult to adapt to the special needs of a particular practice.

Physicians need help in making informed choices and in dealing with the logistical and financial hurdles that have until now often made it unattractive for

them to invest in IT solutions. Many physicians tell me that they have no innate objection to electronic medical records, decision support technologies, or other aspects of office automation, but they do not know where to start and are not sure that they can justify the expense for the benefits gained. There is no certification process that allows them to be sure that a product that is offered is compliant with emerging national standards for connectivity, data storage and exchange, privacy, and security. Indeed, such standards are still evolving and there is as yet no coherent and well-accepted process for bringing such standards to a broad consensus that allows all stakeholders to adopt and comply with them. Consultants often seem as confused by the options as the physicians are, and the expensive failures of "recommended systems" are legendary. It is small wonder that clinicians are looking elsewhere for assistance.

In addition, the arguments for implementation of health care IT are too often viewed by clinicians as being primarily directed at health systems, payers, and patients, with much less direct benefit appreciated by the physicians themselves. They understandably ask why, in a financial environment characterized by significant regulatory and reimbursement challenges for physicians in practice, the doctor should be asked to invest in medical record systems whose primary systemic beneficiaries are elsewhere. This misalignment of fiscal incentives is often cited as a major barrier to widespread dissemination of information technology into the practice settings where, ironically, the primary data are gathered and where decision-support capabilities could most beneficially be utilized. Solutions need to recognize that physician offices are not only *sources* of key information (required by payers, health policy makers, researchers, and large institutions), but also vitally important *users* of information that a robust information infrastructure could be delivering directly to their practice settings—rural, suburban, inner-city, or academic. When physicians experience clear benefits from their IT investments, and see efficiencies and cost savings as well as enhancements to information access, a major barrier to suitable investments will have been overcome.

The problems being discussed today, and the exciting opportunities that will accompany their solution, are clearly much broader than the single issue of how best to distribute information technologies into individual practice settings. Yet there are several steps that federal agencies could take in facilitating solutions to the issues I have identified.

First, there must be a suitable alignment of financial incentives so that those who most benefit from the investment in health care IT are the ones who are expected to invest most heavily in its dissemination and implementation.

Second, federally facilitated programs to enhance the process for setting and adopting standards (a shared public-private effort) are sorely needed.

Third, a mechanism for assuring rigorous certification of vendor-provided solutions is required so that individual purchasers can be assured that a given product is compliant with the emerging requirements of a National Health Information Infrastructure.

Fourth, we must recognize that expertise in health care information technology is more than expertise in information technology itself. There is an important, unique discipline at the intersection of health care and computer systems, and we need to nurture the training of experts who can be the researchers, designers, developers, implementers, and evaluators of health information technology in the future. Short-term programs to enhance the production of such individuals are needed, as well as increased support for academic training programs and well-defined career pathways. The National Library of Medicine has been a leader in this area, but its resources for training are limited and the nation's need far exceeds the ability of current NLM programs to produce the people who can provide the leadership we need in this burgeoning area.

Members of the subcommittee, I am pleased to have had a chance to share some of these thoughts with you today and welcome the opportunity to answer any questions you may have regarding my testimony.

Mr. BILIRAKIS. Thank you very much, Doctor. We have been joined by Joe Barton, the chairman of the full committee. He has to cover all of the committee hearings and what not, as well as other things, so it is a real compliment to this subject, quite frankly, that he is even willing to sit in on a few minutes of it. Joe, I am going to yield to you at this point and see——

Chairman BARTON. Mr. Chairman, I am not going to have any formal questions. I have actually read the testimony, I read the

staff memo. I appreciate the Secretary of HHS appearing on the panel before these gentlemen. I appreciate all you folks are doing. It is obvious that there is a lot to be done and a lot of money that can be saved, and while it is not in the testimony, it is obvious that there is quite a bit of institutional opposition to it by groups out in the country that for whatever reason oppose some of the initiatives that are being put forward.

So this is something that we are going to work on certainly in the next Congress. I doubt we will be able to implement much in this Congress, but Chairman Bilirakis has got a passion for this, and it is a passion that is going to be rewarded hopefully in the next Congress. So I appreciate you all being here.

Mr. BILIRAKIS. Thank you.

Chairman BARTON. With that, Mr. Chairman, I am going to yield back.

Mr. BILIRAKIS. Well, thank you, Mr. Chairman. You know, we have found out that there is a lot of money that can be saved, but I think we have also found out that with better incentives—with better efficiency that would be available as a result of doing something like this, we would save an awful lot of lives. I guess that also translates into money in a way. But someone, I think it was the Secretary, made the comment about—someone made the comment of 98,000 lives lost a year as a result of medical errors. And if you can cut that down into maybe even half of that, for crying out loud, as a result of this, that is enough of a reason for us—I mean after all we are here representing the public regarding quality of medicine, medical care and what not, and hopefully that will, if nothing else—and then when you add the money to it too, I think that should give us enough incentive.

Dr. Blumenthal, you said you are a primary care physician? Do you have a practice?

Mr. BLUMENTHAL. Yes, a small practice, sir.

Mr. BILIRAKIS. And you are an internist?

Mr. BLUMENTHAL. I am an internist.

Mr. BILIRAKIS. An internist.

Mr. BLUMENTHAL. Practice in the out-patient department of a large hospital in Boston.

Mr. BILIRAKIS. In Boston. My oldest son is an internist, and I haven't talked with him about this, but I will. I will.

Probably this weekend. What is going to be his reaction?

Mr. BLUMENTHAL. Well, I think that most physicians favor this in principle but are concerned about its impact on their daily lives. I think that Dr. Shortliffe began to get at that, and one of the things that I think does occur when you introduce these systems is that in the short term they take time. There is time required to put in patient information before it is in the computer, available to be accessed. There is time—every time a patient comes into my office, I go through the medications and make sure that they are the right medications and the right dosage, and I have to enter that data manually. That adds to the length of a patient visit at a time when there is a lot of pressure on patient visits to make them shorter. And, therefore, it has fairly reliably been demonstrated, I think, that you see fewer patients because your visits get longer at the introduction point of the electronic health record.

Mr. BILIRAKIS. Which is what period of time, would you say?

Mr. BLUMENTHAL. Well, a couple years, I would say.

Mr. BILIRAKIS. A couple years?

Mr. BLUMENTHAL. And likelihood is that you save a lot of money elsewhere in your practice. You may need fewer people to file records, you may need fewer receptionists, your time may be saved on other things. But in the short term, there is this hit to your bottom line that I think constitutes one of the most compelling reasons for a loan or some kind of assistance program to the average physician so that when you ask your son what he thinks about it, if he doesn't have one already and if he is in independent practice, he will likely say——

Mr. BILIRAKIS. He is by himself.

Mr. BLUMENTHAL. He will say, "Dad, that is a great idea."

Mr. BILIRAKIS. Some people say it is impossible for particularly a family doctor, primarily care physician to be able to make it being alone. Well, so far, so good, but it is killing him, I think.

Mr. BLUMENTHAL. So imagine if his income were down 20 percent in a year. How would he feel about something——

Mr. BILIRAKIS. Do you all agree there that there is that period of time there, transition period, that is going to cost—so when we talk about incentives, you are not really talking about a reward for doing this, you are talking about basically making the physician whole, the office whole, the expenses, the additional equipment, et cetera, and then the time that you indicate that would be taking additional time.

Mr. BLUMENTHAL. There is an ongoing thing as well, and I practice in a big system, and when I don't know what—when something goes wrong with my software, I can pick up a phone and call the help desk that is run by my health care system. And if you are in private practice and you suddenly find that your software has a glitch and you have to get the information out of it in order to be useful to your patients, well, you need help right away. You can't wait three or four days. So finding a way to make sure the physicians can weather that challenge is also, I think, a big issue that needs some attention.

Mr. BILIRAKIS. Anything you would like to add, any of you?

Mr. SHORTLIFFE. I would be surprised if you showed your son in solo practice the VA demo that we just saw or one of the many other fine, more solo practice oriented systems that do exist, that he wouldn't see the advantages of having that at the end point. If it only could like appear and be working perfectly overnight. It is the "how do I get from here to there" question that is the dominant one that I think prevents people from making that move.

Too often they have heard about failed experiments by colleagues and others that haven't worked well. They don't really have the expertise to make that decision, and so it is, "Help me to make sure that I don't make a mistake, that I don't lose a fortune doing this, and then at the end of the day I can really then take advantage of these kinds of facilities." And they just don't know how to do it.

Ms. DIAMOND. I just wanted to add that I think the incentives you need to be thought about is something to get them over that period of adoption and acquisition of the system, but I also think one thing that we know is that those systems don't deliver all the

benefits they could deliver if they connect to other systems. In other words, just having something in your practice that doesn't talk to the pharmacy or to the laboratory or to other physicians doesn't have the ability to, as you said, save lives and reduce medical errors. And I think that is something we need to think carefully about, because if we only incent the adoption of the technology and we don't incent that technologies need to talk to other things and improve the outcomes of care, which the current model does not do, we will end up with silos, and I don't think it will return the investment we are hoping for.

Mr. BILIRAKIS. Sure. You want to add anything, VA?

Mr. KOLODNER. The connectivity really magnifies the benefits by orders of magnitude. The equivalent would be if you think about the PCs that you had 15 years ago before the Internet and you could do word processing, you could do some spreadsheets, you could do some taxes, rudimentary then, and it was of some use. But the connectivity that the Internet has provided and the availability of information now is just tremendous, and I think that is the kind of leverage you get when you——

Mr. BILIRAKIS. Well, that is what kind of really gets to me is the availability and we are just not taking advantage of it. The entire profession is just not taking advantage of it. The government is not taking advantage—although we should be able to do it, for crying out loud, in so far as tying in HHS with the Veterans Administration, with CDC, et cetera, et cetera, NIH and whatnot. It would sure be an awful lot of easier, and yet we are not doing it. So shame on us in that regard.

Dr. Kolodner showed us the videos, the slides, whatever, and they were really, I think, impacting, but I can see a veteran coming into a facility, let's say—I should use Bay Pines with the problems that they have had with their computers—I will use James Haley in Tampa. There is a snowbird, lovingingly we call them, coming down from Michigan—but not from Texas, they don't come from Texas to Florida or vice versa—coming down from Michigan in the winter and being a patient in one of the medical facilities up there, the VA facilities. So it is easy enough to interact. But you go into the private sector, now that is more of a problem, isn't it?

Mr. BLUMENTHAL. Mr. Chairman, I have lots of patients who are snowbirds, and I have one I am thinking of right now who has had a heart transplant who goes to Florida in the winters, and he usually comes back on different medicines and with different regimens, and I never know why. And if I could find out why, it would certainly help me care for him better. And that is a very common experience. You don't have to go to Florida to have that disconnect. You can go right across town to one of the other excellent hospitals in my community, and I am dependent on getting letters from specialists from around town, which often arrive but not always, to find out what their care consisted of or I am dependent on their information, what they can recall.

Mr. BILIRAKIS. Well, yes. That brings up the point really that, again, the emphasis on Dr. Kolodner's exhibition was the x-rays and whatnot that took place and how they were being used, even how they took place. Now, when you get into the private sector and considering the litigious society that we are in, medical malpractice

and everything of that nature, would a doctor in Michigan, and I am not talking about VA now but private practice, a doctor in Michigan basically depend upon an x-ray that was taken in Tampa, Florida before he would—would he do that or is there—you think he would? Okay. I mean that could be a big savings right there in terms of——

Mr. BLUMENTHAL. In my situation, I would probably want one of our radiologists to bring it up on the screen and look at it, look at the technical quality, but the likelihood is, given the proficiency of the technologies that we have available, that that technical quality would be good.

Mr. BILIRAKIS. Well, that is good to hear that. How do we compare on this with the rest of the world?

Mr. SHORTLIFFE. I think it is clear that we are struggling to keep up with the rest of the world in this area largely because in many other countries health care systems are more like the VA. They have centralized single pair environments where the decisions about how to handle this technology and how to instill into practices and the like are determined centrally and without the kind of fragmentation.

So here we are very dependent right now on will a grassroots activity—that is what I have been watching for 30 years—will a grassroots activity create something that is truly national and comprehensive and standardized? And increasingly I think we are aware that the answer is no, that the organizations that manage to pull this off are those that have more central authority and decision making, and the VA has I think proven that in this country. So we have examples in other countries of much more consistent and standardized exchange of data simply because there is a national health service or other standardized approach.

Mr. BILIRAKIS. Yes, something like the VA, in other words, which makes it a little less complex. Should this be a part of their education, their being the providers?

Mr. SHORTLIFFE. Well, this is what I do much of my time is educate people in this area, and I must say I think the difficulty we have in making traditional medical schools believe that this is an important topic for medical education is challenging for us.

Mr. BILIRAKIS. Is that right? That difficult.

Mr. SHORTLIFFE. It is not part of medical education right now. You could argue that maybe all people need to do is be exposed to good systems while they are in training so that they know how the other half can live and then they can hopefully take some of those lessons into the practice settings that they move on to when they are through with their house staff years, but to be quite honest, I think there is more to this field than just being an informed user. To be a good selector of systems, you need to have some understanding of some of the underlying concepts. So many of us feel that there is a body of knowledge that goes beyond use that should be conveyed to future physicians as well.

Mr. BILIRAKIS. Well, I have taken up——

Mr. KOLODNER. Mr. Chairman?

Mr. BILIRAKIS. Oh, I'm sorry.

Mr. KOLODNER. One thing about that, and I think Dr. Shortliffe is correct, that it is more than just exposure, although it is useful

to at least have that experience. One of the things about the VA is because it is so widespread and affiliated with about 107 of the 127 medical schools, that about 70 percent of the doctors and over 50 percent of other allied health professionals do rotate through VA as some part of their training. So they at least get to——

Mr. BILIRAKIS. So they pick that up then.

Mr. KOLODNER. But still have the misalignment of the incentives once they get out of that experience and go into practice, and that still needs to be addressed.

Mr. BILIRAKIS. Okay.

Mr. SHORTLIFFE. If I can make a quick comment about this because Dr. Kolodner might not, I can tell you that in my own experience in my former institution in California where our medical students and house officers rotated both through an academic medical center, private hospital environment and through the VA, I watched this fascinating transformation over the last 30 years where about 30 years ago you sort of dreaded your VA rotations. Things were not well organized, they were more backwards, and people then went off to the university environment, and they would rotate between these two environments and be exposed to both.

Today, it is very much the opposite at that institution. People know that their lives are easier at the VA when they are a house officer or an intern or a resident because of the quality of the information technology that is available to them, and they look forward to their VA rotations. It has changed their perceptions a great deal just in the years I have been observing medicine.

Mr. BILIRAKIS. That is quite a compliment. I have taken up an awful lot of time. I am going to yield to Mr. Green, gentleman from Texas, who has just come in to join us.

Mr. GREEN. Thank you, Mr. Chairman, and I apologize for not being here earlier, because this is an important issue. And it is just that we have different committees, in fact I would give up the committee I was in, my Ethics Committee, for easily sitting here because of the importance of the information IT for health care.

I want to follow up on your questions about incentivize because that is one of my concerns is how do we incentivize it for the individual doctor. I know loans. One of the ways I was thinking here because talking with a lot of my practitioners, professional liability. I represent a very urban district in Houston; in fact, our VA facility is really a great facility, and having dealt with it in the private sector as an attorney doing psychiatric work, I could tell the difference over the last 20 years, and we have a new facility from the early nineties, but, again, the professionalism at the VA is just so much better than it was 15 or 20 years ago. In fact, a few years ago, if you remember my neck brace, the same surgeon that did my fifth and sixth at Baylor College of Medicine Methodist Hospital in Houston did surgery at VA two days a week, and he was a top neurosurgeon and a great guy. So the professionalism is there and the quality is there, because I know I follow that too with my constituents too.

And what I have seen at our local VA, and I know it is elsewhere, that the technology and the use of the information is so much better than a lot of my private hospitals, for-profit and nonprofit. But is there a way that we could encourage—for example,

I know businesses in my district have to go through to get a lower workers' comp rate, they have to do certain things. Is there a way that professional liability could be lowered because you can actually show that the insurance companies will pay less claims by using IT and quality using it. I mean I know on the Federal level, because most of that is State regulation, but I know using the information it seems like it would—and the concern of the chairman and all of us have, and I know you at that table do, about the errors issue and if that would help. Has that been explored by any of the private sector? I know VA doesn't have that worry.

By the way, I have a daughter who has finished her second year of residency at UTM in Galveston and there her and her husband are at a huge facility, so they don't have to worry about professional liability, but I have a lot of physicians who do.

Mr. BLUMENTHAL. Congressman, our medical malpractice system is so broken that I am not sure reducing errors would result in reducing premiums. And the reason I say that is because so many times the people who are the victim of errors don't sue, and people who aren't the victim of any errors do sue. And so it is a very messy system. I don't know of any studies, but I haven't looked at this literature, that show a relationship between the adoption of electronic records and rates of malpractice claims, which is different from rates of safety problems. And so I think that there is not necessarily one-to-one feedback. I think it is an interesting thing to pursue, but I think there are probably many more direct positive feedback mechanisms that flow than the malpractice.

Mr. BILIRAKIS. Could that be an incentive, some sort of legislation that would tie the two in in some way?

Mr. BLUMENTHAL. If you want to get in the business of regulating malpractice premiums, I am sure that that would be a good lever to use.

Mr. GREEN. Having served 20 years in the legislature, and I know that is supposed to be done on the State level, I don't know if we want to regulate medical malpractice on the Federal level, but I would hope our States would do it, because I don't want to regulate auto insurance either.

Next question I have is concerning both the SARS and anthrax and the need for some type of integrated health information system. Frankly, I think we dodged a big bullet with SARS. I mean aggressively on both an international level, in our own country, very lucky too. What is the story, I would rather be lucky than good. But my concern is because of our lack of that information sharing, even with CDC doing the best they can, is there on the Federal, State and local levels, using the electronic records and the information sharing—and, again, if we can share it, then we ought to be able to do it with our neighbor in Canada, which was the next concern. And I know there was some coordination, but, again, I don't feel comfortable with—I would rather be good than just lucky, and I think we were lucky with SARS. Could anybody on the panel talk about that?

Mr. SHORTLIFFE. The issue of connectivity that Dr. Diamond was mentioning a moment ago is at the heart of the use of information technology to solve or at least help support solutions to problems such as that kind of public health threat. And you may have heard

prior testimony before this committee in the last few years about the problems of the public health infrastructure, which, frankly, is the infrastructure that supports all the things we are talking about today. It is the same infrastructure. So that as we build up a structure that supports public health and the connectivity of public health departments into regional and national networks, the ability to gather data from multiple sources and so forth, we are building the same network that can also allow medical records to move with a patient from one emergency room to another, et cetera.

So these are highly linked issues, but I would totally agree that those kinds of public health concerns, like SARS or any kind of rapid detection of infectious threats, biological threats in particular, is absolutely dependent upon getting in place a national health information infrastructure that is more effective than what we have now.

This has been an area where I would argue, because I know people in the public health service, there has been abysmal support financially for the development of the technology over the years, and the public health departments until very recently were sometimes dependent upon a 2,400 baud modem to call into some local node with 1 computer shared by 5 operatives in a local area. And, fortunately, I think we are seeing some improvement in that, but it was pretty dismal only a decade ago.

Mr. GREEN. I have noticed in Houston, because we have an immunization project, our office does every year, it comes up in August, a couple weeks before school starts, and because of it, our immunization rates are lower than some of our neighboring cities and other urban areas. But dealing with the groups that provide it, Mr. Chairman, I don't know if you have this problem in Florida, but we have a city of Houston health department and county, our Harris County, who will provide the immunizations. And up until a couple of years ago, there wasn't any communication. They actually used different systems to have immunizations, and that is a State issue. In fact, we have gotten money to our State health commissioner to be able to try and coordinate that between these two local agencies. Again, there is so much we can do, provide them resources to do it, but that is just a symbol, I guess, of some of the problems we are having.

Mr. SHORTLIFFE. It is a really great example, though, because you have tried to solve it by coming up with an immunization solution, but if the infrastructure were in place, you would have used that for this kind of connectivity in sharing.

Ms. DIAMOND. I was just going to add that that is really at the heart of, I think, prior testimony today of the importance of standards and interoperability as we think about these incentives, because short of that it is not just getting the system in place in an office or public health department, it is about getting a system that will talk to other things in place, and that all has to be tied to together or we do end up with stovepipes or silos or whatever you want to talk about that get in the way of doing the job and improving quality and improving public health.

Mr. GREEN. And to follow up one more time, Mr. Chairman, on the effort, is there any Federal money available to deal with that

information sharing? Is there money that we have authorized that would provide for that?

Mr. BILIRAKIS. Well, the Secretary told us that there are a few million dollars out there, but he did refer to the possibility of using a certain amount of the waste, fraud and abuse savings and allocate it to something like this, so it wouldn't be necessarily new money. The problem that we have, Mr. Green knows very well and we all do up here, is the Congressional Budget Office. And even if you could show, geez, $140 billion savings every year, even if you can show much more than that, Mr. Stupak indicated about 25 percent of health care costs could be saved, the Congressional Budget Office wouldn't give you any credit for it, and they would only hit you with the expenses, these incentive expenses and whatnot, as we call them. So that is the problem that we have, obviously.

But I feel we can work around it. And if we can work together as a Congress, the majority and minority, and if we—if, and I would like to say when, we create a task force or whatever we want to call it, to work on this subject and feel that we need to, as part of that group, the private sector, who would represent—Dr. Diamond, who would represent the public? Who would you suggest would——

Ms. DIAMOND. That is a very good question. We have been, as you said, trying to pull together all the stakeholders from the health care industry, and it is often difficult to find people who represent the public. There are consumer groups out there who try to represent public interests, and we work with several of them in Connecting for Health. One of the reasons I like to think that both of our foundations, both the Markle Foundation and the Robert Wood Johnson Foundation, got into this is because the public interest is our objective as well.

And I think there is an opportunity to represent the public. How much of the public you represent, I imagine that Congress' job, but I do think the public voice does need to be in the dialogue and in the debate as this agenda moves forward.

Mr. BILIRAKIS. Yes, I agree.

Ms. DIAMOND. I think without that, we will miss a huge opportunity.

Mr. BILIRAKIS. I agree. I didn't mean to take away from you, Gene.

Mr. GREEN. Oh, no. I was just going to follow up, and one of the other issues is that for an individual practitioner to buy this to the standards so they don't just get sold something that, like you said, is just worthless, and it has to have some standards, maybe using Medicare, for example, because——

Mr. BILIRAKIS. Yes, the Secretary mentioned that.

Mr. GREEN. Yes, that we could use—that Medicare could have certain standards for the informational health sharing. So a physician, a solo practitioner who really doesn't have time to go learn about the computers would have some kind of ability to be able to say, "Yes, I will make this investment to go with it." Thank you, Mr. Chairman.

Mr. BILIRAKIS. The VA, do they somehow interact with the private sector in terms of availability of software and whatnot?

Mr. KOLODNER. Yes, sir. First of all, VA participates in a lot of public-private forums, so we are working very closely, for example, with Connecting for Health and other activities. With an estimated 40 percent of our veterans getting some care in the private sector each year, it is very important for us to see the private sector actually use these technologies so that we can exchange back and forth and provide our data to the providers who are caring for them in the community and vice versa.

In terms of software, one of the things is that there are some very good companies out there, some very good vendors, though there are the incentive issues, as we have seen. And so it is very important for us to focus in terms of our software on the rural and underserved areas where with our initiative with CMS the software is really being configured to try and meet the needs of that particular community. But even before that, we have had some entities, the D.C. Department of Health and a couple of States, that have indicated that they are going with the VistA software and have found some companies to provide support to them. And, in fact, just last week, the country of Mexico, in one of their public health systems, has decided to go with VistA and have made a 3-year commitment to start putting it up in three hospitals with the intent to go very widespread, but that particular portion accounts for about 60 percent of all of the population of Mexico.

Mr. BILIRAKIS. You wanted to add——

Mr. BLUMENTHAL. Mr. Chairman, if I could add a couple of points to questions that have been raised in the past. One concerns money, and it seems as though the Congress has not been unwilling to add expenditures to the Medicare program where it felt that they had a real return for the beneficiaries of the program. It strikes me that this is one such area. Whether CBO marks it as an additional expenditure or not, it certainly marked the prescription drug benefit as an additional expenditure, and yet the prescription drug benefit was passed.

The second point, I guess, has to do with——

Mr. BILIRAKIS. But there is not an unlimited pool out there. Somewhere along the line——

Mr. BLUMENTHAL. I understand that.

Mr. GREEN. Particularly in that pool you are not sure how much it is.

Mr. BILIRAKIS. Well, since when have you even cared?

Mr. GREEN. I have only been here 6 terms. You are training me.

Mr. BILIRAKIS. All of a sudden—who are the fiscal conservatives—all of a sudden. But any case.

Mr. GREEN. I am good lawyer, I can argue either way.

Mr. BLUMENTHAL. The other point I guess I wanted to make was that it seems to me that these information technologies are core to our national security when it comes to bioterrorism and health care security. And there is no reason, I think, why some of the funds that have been available for homeland security couldn't and shouldn't be used for the shoring up of the ability of front-line providers of care in emergency rooms around the country, for example, to provide prompt information on atypical disease patterns that could represent terrorist activity.

Mr. BILIRAKIS. Well, you have been terrific, and you have been patient, and I apologize for the delay. You know, you sit there and you listen to our opening statements. Thank God there weren't too many here today for that. If Gene had been here, it would have added another——

Mr. GREEN. You only give me minutes, Mr. Chairman, and I talk slow.

Mr. BILIRAKIS. But anyhow you are very patient, and we appreciate that very much. I would say that the opening statements of all members of the subcommittee are made a part of the record, without objection. We will have additional questions to you in writing, as we always do, and we appreciate a timely response to those. And, additionally, I invite you to furnish us whatever it is you please, anything that might be helpful to us.

I am hopeful that in the fall that we can at least get started talking about this. No, we are not going to come up with anything until the next Congress and hopefully even then, but hopefully we can start at least talking, maybe we can start meeting.

But there are all kinds of obstacles out there. You have mentioned them, Dr. Diamond. There is a lot that you haven't even mentioned, but lots of those obstacles coming in our minds, I think, and that is why these things don't get done. But hopefully we will be open-minded enough to get together and try to do something about this. It is a shame. What a resource that is out there that—talk about malpractice. What a resource we are not taking advantage of.

Well, thank you very much. Hearing is adjourned.

[Whereupon, at 5:07 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF AMERICAN CLINICAL LABORATORY ASSOCIATION

The American Clinical Laboratory Association (ACLA) congratulates Chairman Bilirakis and the Subcommittee on Health for holding this hearing on health care information technology (IT). ACLA is an association representing independent clinical laboratories throughout the United States including local, regional and national laboratories.

Increasingly, clinical laboratories are using IT innovations to improve patient care, as well as to promote the highest level of efficiency and affordability. Implemented properly, IT will provide ready access to timely, relevant, reliable and secure information through an interconnected infrastructure affording better health and health care.

ACLA wants to make sure that the laboratory industry is an active participant as IT becomes a more important part of health care delivery. Specifically, we want to avoid the problems that the laboratory industry experienced with the implementation of the HIPAA standard transaction requirements in which requirements did always not match the operational realities of providing laboratory services and billing for these services. Accordingly, ACLA is taking a more active role in the IT issue by joining the private sector coalition on health care IT, the E-Health Initiative (E-Hi).

ACLA is currently working with various agencies within the Federal Government on the issue of health information technology—including the Centers for Disease Control and Prevention (CDC), the Agency for Healthcare Research and Quality (AHRQ), and the Centers for Medicare and Medicaid Services (CMS). Most notably, ACLA is working with CMS' Office of Research, Development, and Information on the development of standards for clinical laboratory data reporting. This demonstration project seeks to investigate the potential benefit of linking existing data streams including laboratory, pharmaceutical, and radiological data through the Doctor's Office Quality—Information Technology (DOQ-IT) project. ACLA is committed to helping the Administration move from paper to electronic health records. ACLA is pleased CMS sought the clinical expertise of the association and its mem-

bers since laboratories have been utilizing this means of information sharing for many years.

Again, congratulations to Chairman Bilirakis and the entire Subcommittee on Health for holding this hearing. ACLA looks forward to working with the Committee to facilitate the adoption of IT throughout the health care sector.

RESPONSE FOR THE RECORD FROM THE DEPARTMENT OF VETERANS AFFAIRS TO QUESTIONS FROM RANKING MEMBER JOHN D. DINGELL

Question: To help assess the type of financial commitment necessary to implement a health information technology strategy, please itemize the funding the Department of Veterans Affairs has spent on each VA information technology advance such as electronic medical records, imaging of patient labs, patient access to records, telehealth and other aspects of VA's health information technology infrastructure including maintenance and updates year by year over the past 10 years. For each health information technology advance, can you state where the funding originated?

Response:

VA's Health Information System

The Department of Veterans Affairs' (VA) Health Information System is a compilation of more than 100 highly integrated clinical and administrative applications that support care delivery. VA began to develop component clinical applications such as laboratory, radiology, pharmacy, imaging, etc. in the early 1980's. Subsequently, the same development and operational infrastructure was used for administrative and financial applications such as employee timekeeping, patient accounts and VA's billing and accounts receivable financial systems. These applications, initially known as the Decentralized Hospital Computing Program (DHCP) and later as the Veterans Health Information Systems and Technology Architecture (VistA), represent both VA's Electronic Medical Record (EMR) and non-EMR applications needed to run the VA hospital information system.

Funding for the development and maintenance of all information technology efforts came from the Medical Care, Research and MAMOE appropriations for FY 1995 through FY 2003 and from the Medical Administration appropriation in FY 2004. This funding supports the development, deployment, operations and maintenance of applications software; acquisition and operation of commercial software; acquisition, operation and maintenance of hardware in support of healthcare delivery; acquisition of information technology (IT) services; and salaries and benefits for VA IT employees.

VA does not break down its budget documentation by an EMR category. Expenditures in support of health information technology/efforts such as Medical Imaging (including cardiology, laboratory, pathology, radiology, etc.), Blood Bank, Bar Code Medication Administration, Laboratory and patient access to medical records are funded through the health IT budget. Applications that comprise the EMR, as well as the expenditures for infrastructure, support, and operating expenses are contained in broader categories in VA's budget documentation. For example, in FY 1997, IT projects included clinical EMR applications such as pharmacy, clinical laboratory, radiology, nursing, surgery, mental health, dietetics, medical records tracking, as well as, administrative/financial applications, including enrollment, telecommunications infrastructure, and universal billing. These initiatives were mentioned in the budget narrative; however, the historical specific cost information is not available.

The available historical or estimated obligation data are displayed on Attachment A for FY 1995-FY 2004. The funds specified were and are used to support development and operations of VA's EMR nationally. Obligations for financial information systems, telecommunications services, phone bills, web operations, desktop computing, and administrative staffing support are also included in these totals.

Based on the FY 2003 health IT budget, the average annual cost of operating and maintaining VA's EMR, VistA, was $62 dollars per enrollee per year (based on 7.2 million enrollees). This figure included field costs for hardware, software and support personnel.

The accounting processes for Information Technology (IT) spending have changed significantly over the course of 10 years. Project-specific information is available for the current fiscal year. Implementation and training costs are also included in the figures below: FY 2004 program spending for VA's; VistA Imaging, My Health*e*Vet, etc., follows:

VistA *(includes Computerized Patient Record System CPRS)*—$353.6 million

My Health*e*Vet *(including patient access to medical records)*—$5.9 million

VistA Imaging *(displays images from various VistA applications)*—$70.2 million
VHA Computing Infrastructure *(required to run VistA systems)*—$84.7 million

Telehealth

Telehealth development in the Veterans Health Administration (VHA) began during the early 1990's. This work built on the VA's existing and emerging information technology infrastructure, including network connectivity, video conferencing, and use of clinical applications. Early foundational work also involved testing the use of new technologies, e.g., use of the Internet as a tool to communicate with veterans, audio/ video streaming through the web, on-line submission of forms, use of Public Key Infrastructure to securely identify individuals, etc. Funding for this foundational work was part of VA's health IT budget; however, it was displayed in the budget under capital expenditures for infrastructure and/or development for clinical VistA applications and not broken out specifically for Telehealth.

In 1997 a Telemedicine Strategic Health Care Group (SHG) was formed in the Office of Patient Care Services in VHA to develop the clinical processes necessary to develop and sustain Telehealth in VHA. The expenditures presented below, and in the accompanying spreadsheet (under Telehealth obligation data) therefore reflect the clinical processes necessary to make Telehealth a part of mainstream healthcare delivery in VHA. There are specific technologies e.g., teleradiology that have been purchased for the direct provision of services at the VISN and facility level, are contained within the medical equipment budget, and have not been separately itemized to Telehealth. The direct clinical consultation/care provided via Telehealth is not separately itemized. These clinicians are employed to deliver care and the proportion of time devoted to Telehealth is variable and not separately itemized. In July 2004, the Telehealth SHG was incorporated into a new Office of Care Coordination.

Attachment B provides VHA Telehealth expenditures and funding sources for FY 1995-2004. Home Telehealth IT infrastructure support funding in the amount of $2,098,000 for FY 2003-2004, is not included in the total Telehealth program support expenditures.

Summary of VA Health Information Technology Obligations
(dollars in thousands)

The totals used in this report are from the Medical Programs volume of the Department of Veterans Affairs Budget Submission for the requested years.

The accounting processes for Information Technology (IT) spending have changed significantly over the course of ten years. Program spending for Fiscal Year 2004 is estimated in this report.

Category	FY1995 Actual	FY1996 Actual	FY1997 Actual	FY1998 Actual	FY1999 Actual	FY2000 Actual	FY2001 Actual	FY2002 Actual	FY2003 Actual	FY2004 Estimate
Personal Services	$145,628	$159,778	$194,226	$238,405	$260,588	$258,325	$310,065	$353,192	$366,696	$383,197
Employee Travel	$2,369	$3,129	$6,570	$9,332	$9,635	$5,578	$7,797	$8,200	$5,340	$7,687
IT Hardware/Software Rentals	$4,007	$4,019	$2,175	$1,782	$2,126	$4,741	$7,000	$14,862	$17,964	$19,827
Commercial Services	$44,441	$43,707	$100,900	$94,167	$73,054	$199,900	$244,899	$348,874	$341,763	$352,731
Interagency Services	$876	$402	$942	$400	$4,310	$1,291	$1,886			
Intra-agency Services/Federal Supplier	$20,230	$25,763	$77,282	$63,926	$109,713	$78,756	$82,408	$171,179	$248,950	$292,614
Space and Other Operating Expenses	$40,539	$34,138	$27,307	$30,791	$41,792	$31,729	$30,834	$31,920	$31,665	$22,044
Capital Investment	$133,418	$190,190	$348,506	$195,658	$203,917	$264,115	$241,746	$144,558	$398,417	$252,547
Total	$391,508	$461,126	$757,908	$634,461	$705,135	$844,435	$926,635	$1,072,785	$1,410,795	$1,330,647