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HEALTH INFORMATICS: WHAT IS THE PRESCRIPTION FOR SUCCESS IN INTERGOVERNMENTAL INFORMATION SHARING AND EMERGENCY RESPONSE?

HEARING

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

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CONTENTS

Page

Hearing held on July 14, 2004 1

Statement of:

Foldy, Dr. Seth, M.D., former Chair, Information Technology Committee, National Association of County and City Health Officials [NACCHO], former health commissioner, city of Milwaukee, associate clinical professor, family and community medicine, Medical College of Wisconsin; Richard S. Weisman, coordinator, Weapons of Mass Destruction Response Program, Jackson Memorial Medical Center, director, Florida Poison Information Center/Miami, research associate professor, pediatrics, UM/Jackson Memorial Hospital; and Gordon Aoyagi, fire administrator, Montgomery County Fire and Rescue Service 115

Gingrich, Hon. Newt, former Speaker of the U.S. House of Representatives, the Gingrich Group; Karen S. Evans, Administrator of e-Government and Information Technology, Office of Management and Budget; David A. Powner, Director, Information Technology Management Issues, U.S. Government Accountability Office; and Dr. Claire V. Broome, M.D., Senior Advisor to the Director for Integrated Health Information Systems, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services 13

Letters, statements, etc., submitted for the record by:

Aoyagi, Gordon, fire administrator, Montgomery County Fire and Rescue Service, prepared statement of 133

Broome, Dr. Claire V., M.D., Senior Advisor to the Director for Integrated Health Information Systems, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, prepared statement of 86

Clay, Hon. Wm. Lacy, a Representative in Congress from the State of Missouri, prepared statement of 8

Evans, Karen S., Administrator of e-Government and Information Technology, Office of Management and Budget:

Information concerning high level deliverables 110

Prepared statement of 62

Foldy, Dr. Seth, M.D., former Chair, Information Technology Committee, National Association of County and City Health Officials [NACCHO], former health commissioner, city of Milwaukee, associate clinical professor, family and community medicine, Medical College of Wisconsin, prepared statement of 118

Gingrich, Hon. Newt, former Speaker of the U.S. House of Representatives, the Gingrich Group, prepared statement of 18

Murphy, Hon. Tim, a Representative in Congress from the State of Pennsylvania, prepared statement of 12

Powner, David A., Director, Information Technology Management Issues, U.S. Government Accountability Office, prepared statement of 70

Putnam, Hon. Adam H., a Representative in Congress from the State of Florida, prepared statement of 4

Weisman, Richard S., coordinator, Weapons of Mass Destruction Response Program, Jackson Memorial Medical Center, director, Florida Poison Information Center/Miami, research associate professor, pediatrics, UM/Jackson Memorial Hospital, prepared statement of 127

HEALTH INFORMATICS: WHAT IS THE PRESCRIPTION FOR SUCCESS IN INTERGOVERNMENTAL INFORMATION SHARING AND EMERGENCY RESPONSE?

WEDNESDAY, JULY 14, 2004

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY,
INTERGOVERNMENTAL RELATIONS AND THE CENSUS,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:35 p.m., in room 2154, Rayburn House Office Building, Hon. Adam Putnam (chairman of the subcommittee) presiding.

Present: Representatives Putnam, Murphy, Miller, and Clay.

Staff present: Bob Dix, staff director; John Hambel, senior counsel; Dan Daly and Shannon Weinberg, professional staff members and deputy counsels; Juliana French, clerk; Felipe Colon, fellow; Erik Glavich, legislative assistant; Adam Bordes, minority professional staff member; and Jean Gosa, minority assistant clerk.

Mr. PUTNAM. A quorum being present, this hearing of the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census will come to order.

Good afternoon and welcome to the subcommittee's hearing entitled, "Health Informatics: What is the Prescription for Success in Intergovernmental Information Sharing and Emergency Response?"

The purpose of this oversight hearing is to examine the progress and impediments to the development and implementation of an efficient, secure, and reliable health information sharing network related to public health issues and emergency response: at the clinical care delivery, public health and consumer health levels, as well as among and between various government entities. At this hearing, the subcommittee will explore the role and status of technology in contributing to the success of those efforts. The subcommittee will also review the progress and results of the Federal Government's efforts in Consolidated Health Informatics e-government initiative. Further, the subcommittee will explore efforts to develop standards for the collection and use of health information to facilitate information sharing, as well as privacy protections that are related to the collection and use of such data.

Today's hearing is an opportunity to examine the efforts underway in the advancement of information technology in the healthcare industry. The industry also provides an opportunity to examine the cross-agency coordination in the collection, consolida-

tion, maintenance, and sharing of healthcare data, as well as across public and private sectors.

This hearing is the second in a series this week that focuses on intergovernmental information sharing and the use of technology to facilitate capabilities. Yesterday the subcommittee examined the issue in the context of the linkage between law enforcement and homeland security, and the need for timely, reliable, and secure information sharing between various Federal agencies, as well as State and local government.

Our Nation benefits from great advances in information technology. Such technologies have introduced multimillion dollar diagnostic instruments, a vast facilities infrastructure, and highly trained providers. However, our healthcare system has not leveraged information technology in healthcare record keeping. As Secretary Thompson remarked, "The most remarkable feature of this 21st century medicine is that we hold it together with 19th century paperwork."

The resolution of this problem is a high priority for the President. Earlier this year, the President further accelerated this work, calling for electronic health records to be available to most Americans within the next decade. His vision is to develop a nationwide health information technology infrastructure that ensures appropriate information is available at the time and place of care, resulting in improved healthcare quality, fewer medical errors, and a reduction in healthcare costs. In April, the President signed an Executive order that laid out the first steps in pursuing this goal with the establishment of a National Coordinator for Health Information Technology within the Department of Health and Human Services. The purpose behind the creation of this sub-cabinet level position was to drive health information technology adoption in the health system and to centralize leadership in the Federal Government in pursuit of this objective.

To achieve the important goals of coordination across the sectors of the U.S. healthcare system, the challenge of the development and implementation of standards and interoperability must be addressed. In many cases, data is collected using a format and vocabulary that suits the individual data collector, without consideration for the possibility of subsequent data sharing. The date is thus useless to others because the data was not collected in a standardized format using standardized vocabulary, and is not interoperable with data sets other healthcare providers may hold. This results in wasteful redundancy and a reduced ability to perform critical healthcare functions.

The consensus across the healthcare industry is that the time is right to establish universal clinical vocabulary and messaging standards to enable technology development which better supports exchange in a secure environment. Leaders in the healthcare industry have communicated how important the Federal Government's leadership role is in adoption of those standards. As the Government is involved in providing and paying for healthcare—it is the largest third-party purchaser of healthcare—the standards used by Federal agencies significantly influence the decisions on standards made by the rest of the healthcare marketplace.

Through the administration CHI initiative, numerous agencies and departments have endorsed 20 sets of standards thus far. About 20 department and/or agencies, including Health and Human Services, Veterans Administration, Department of Defense, Social Security, GSA, and NIST, are active in the CHI governance process. It is through this process that all Federal agencies will incorporate the adopted standards into their individual agency health data enterprise architecture, which is used to build all new systems or modify existing ones. CHI also conducts outreach to the private sector through the National Committee on Vital and Health Statistics.

Beyond improving healthcare delivery and controlling rising healthcare costs, improved information sharing will provide the tools necessary to respond to a bioemergency event, whether terrorist-related or naturally occurring. It is through the development, adoption, and implementation of standards in data collection and transfer, as well as the installation of health IT systems in the clinical care and public health sectors, that the U.S. healthcare system will be better equipped to share information with clinicians, public health officials, and emergency response personnel in the event of a public health emergency. With better information sharing comes faster identification, containment, and response to any health-related emergency or disaster management situation such as bioterror, a SARS-like epidemic, or floods, hurricanes, wildfires, or other natural disasters.

We are eager to hear about the current state of information technology and sharing in the healthcare industry, and what we can do to move forward in creating a more efficient healthcare system not only in terms of patient care, but in terms of improving our response and handling of any bioemergency that threatens the public health at large. I eagerly look forward to the expert testimony of our distinguished panel of leaders from throughout the Federal Government and the private sector today.

[The prepared statement of Hon. Adam H. Putnam follows:]

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SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS
Congressman Adam Putnam, Chairman

OVERSIGHT HEARING
STATEMENT BY ADAM PUTNAM, CHAIRMAN

Hearing topic: "Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

Wednesday, July 14, 2004
2:00 p.m.
Room 2154, Rayburn House Office Building

OPENING STATEMENT

Good afternoon and welcome to the Subcommittee's hearing on *"Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"*

The purpose of this oversight hearing is to examine the progress and impediments to the development and implementation of an efficient, secure, and reliable health information sharing network related to public health issues and emergency response – at the clinical care delivery, public health, and consumer health levels, as well as among governmental entities at the federal, state, and local levels. At this hearing, the Subcommittee will also explore the role and status of technology in contributing to the success of these efforts. The Subcommittee will also review the progress and results of the federal government's

efforts in Consolidated Health Informatics (CHI) e-government initiative. Further, the Subcommittee will explore efforts to develop standards for the collection and use of health information to facilitate information sharing as well as the privacy protections that are related to the collection and use of such data.

Today's hearing is an opportunity to examine the efforts currently underway in the advancement of information technology in the healthcare industry. This hearing also provides an opportunity to examine the cross-agency and intergovernmental coordination and collaboration in the collection, consolidation, maintenance, and sharing of healthcare data, as well as across the public and private healthcare sectors.

Our country benefits from great advances in information technology. Such technologies have introduced multimillion-dollar diagnostic instruments, a vast facilities infrastructure, and highly trained providers. However, our healthcare system has not leveraged information technology in healthcare record keeping. As Secretary Tommy Thompson remarked "The most remarkable feature of this twenty-first century medicine is that we hold it together with nineteenth century paperwork."

The resolution of this problem is a high priority for the President. Earlier this year, the President further accelerated this work calling for electronic health records to be available to most Americans in the next 10 years. His vision is to develop a nationwide health information technology infrastructure that ensures appropriate information is available at the time and place of care, resulting in improved healthcare quality, fewer medical errors and a reduction in healthcare costs. In April, the President signed an Executive Order that laid out the first steps in pursuing this goal with the establishment of a National Coordinator for Health Information Technology within the Department of Health and Human Services. The purpose behind the creation of this Sub-Cabinet level position was to drive health information technology adoption in the healthcare system and to centralize leadership in the federal government in pursuit of this objective.
To achieve the important goals of coordination and collaboration across the various sectors of the US healthcare system, the challenge of the development and implementation of data standards and interoperability must be addressed. In many cases, data is collected using a format and vocabulary that suits the individual data collector without consideration for the possibility of subsequent data sharing. That data is thus useless to others because the data was not collected in a standardized format, using standardized vocabulary, and is not interoperable with data sets other healthcare providers may hold. This results in wasteful redundancies and a reduced ability to perform critical healthcare functions.

The consensus across the healthcare industry is that the time is right to establish universal clinical vocabulary and messaging standards to enable technology development which better supports exchange and sharing in a secure environment. Leaders in the healthcare industry have communicated how important the federal government's leadership role is in the adoption of standards. As the federal government is involved in providing and paying for healthcare – it is the largest third-party purchaser of healthcare – the standards used by federal agencies significantly influence the decisions on standards made by the rest of the health marketplace.

Through the Administration's CHI initiative, numerous federal agencies and departments have endorsed 20 sets of clinical standards thus far. About 20 department and/or agencies including HHS, VA, DOD, SSA, GSA, and NIST are active in the CHI

governance process. It is through this process that all federal agencies will incorporate the adopted standards into their individual agency health data enterprise architecture, which is used to build all new systems or modify existing ones. CHI also conducts outreach to the private sector through the National Committee on Vital and Health Statistics.

Beyond improving healthcare delivery and controlling rising healthcare costs, improved information sharing will provide the tools necessary to effectively respond to a bio-emergency event – whether terrorist-related or naturally occurring. It is through the development, adoption, and implementation of industry-wide standards in data collection and data transferring, as well as the installation of health IT systems in the clinical care and public health sectors, that the US healthcare system will be better equipped to share information with clinicians, public health officials, and emergency response personnel in the event of a public health emergency. With better information sharing comes faster identification, containment, and response to any health-related emergency or disaster management situation such as a bioterror event, a SARs-like epidemic, or even floods, hurricanes, wildfires, or other natural disaster.

I am eager to hear about the current state of information technology and information sharing in the healthcare industry and what we can do to move forward in creating a more efficient and effective healthcare system – not only in terms of patient care, but in terms of improving our response and handling of any bio-emergency that threatens the public health at large. I eagerly look forward to the expert testimony our distinguished panel of leaders in various federal agencies and in industry will provide today.

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Mr. PUTNAM. And we do apologize for the delay in beginning the hearing, as it is the rush to the August recess and votes have interrupted. But I believe that we do have a clean block of time for this hearing. We do very much appreciate your patience and understanding, and at this time I will yield to the distinguished ranking member from Missouri, Mr. Clay, for his opening remarks.

Mr. CLAY. Thank you, Mr. Chairman, and especially for calling today's hearing on ways we can improve the use of information technology in our healthcare delivery system. Since our subcommittee has not spent much time addressing these topics, I hope our witnesses will be thorough in their responses and in outlining their positions on all topics.

Although our citizens are living longer and healthier lives, the state of our Nation's public health remains fragile, not only from long-term public health crises such as HIV and AIDS, but the emergency of new threats such as SARS or antibiotic resistant strains of previously identified viruses. These problems are compounded by demographic disparities in access to quality healthcare, an increasing population of uninsured citizens, and costs for services that continue to outpace the annual rate of inflation.

All of these problems, however, can be partially addressed through the use of information technology in healthcare. Information technology has a positive impact on nearly all components of a national public health infrastructure. More, its intangible measures, including: the improved response of an agency to a public health crisis; significant reductions in the number of medical errors among patients annually, thus reducing the cost and resources necessary for positive outcomes among patients and the improvement of patient care through technology advances.

If we continue our pursuit of utilizing IT throughout our healthcare delivery system, we are sure to experience shorter hospital stays, improved management of chronic disease, and a reduction in the number of needless tests and examinations administered over time. This cannot be accomplished, however, until geographic and economic boundaries are remedied to ensure that our public health infrastructure has the necessary resources for implementing such a system and there remains a vibrant IT research and development component throughout the public and private sector.

This concludes my remarks, Mr. Chairman, and I ask that they be included in the record.

Mr. PUTNAM. Without objection, all Members' opening statements will be included in the record.

[The prepared statement of Hon. Wm. Lacy Clay follows:]

STATEMENT OF THE HONORABLE WM. LACY CLAY
HEALTH CARE INFOMATICS

JULY 14, 2004

Thank you, Mr. Chairman, for calling today's hearing on ways we can improve the use of information technology in our health care delivery system. Since our subcommittee has not spent much time addressing these topics, I hope our witnesses will be through in their responses and in outlining their positions on all topics.

Although our citizens are living longer and healthier lives, the state of our nation's public health remains fragile, not only from long-term public health crises such as HIV/AIDS, but the emergence of new threats such as SARS or antibiotic resistant strains of previously identified viruses. These problems are compounded by demographic disparities in access to quality health care, an increasing population of uninsured citizens, and costs for services that continue to outpace the annual rate of inflation.

All of these problems, however, can be partially addressed through the use of information technology in health care. Information technology has a positive impact on nearly all components of a national public health infrastructure. More, its impact is demonstrated through a variety of tangible and intangible measures, including: the improved response of an agency to a public health crisis; significant reductions in the number of medical errors

among patients annually, thus reducing the cost and resources necessary for positive outcomes among patients; and the improvement of patient care through technological advances.

If we continue in our pursuit of utilizing IT throughout our health care delivery system, we are sure to experience shorter hospital stays, improved management of chronic disease, and a reduction in the number of needless tests and examinations administered over time. This cannot be accomplished, however, until geographic and economic boundaries are remedied to ensure that our public health infrastructure has the necessary resources for implementing such a system, and there remains a vibrant IT research an development component throughout the public and private sector.

This concludes my remarks, Mr. Chairman, and I ask that they be included in the record.

Mr. PUTNAM. I would like to recognize the vice chair of the subcommittee, the gentlelady from Michigan, Ms. Miller.

Ms. MILLER. Thank you, Mr. Chairman. I will be very brief. We all certainly want to hear the testimony from our distinguished panelists here. And I appreciate your calling this hearing today, and certainly all of the panelists for appearing here today, especially noting the presence of the distinguished former Speaker of the House, Newt Gingrich, as well.

The whole issue of healthcare, I think, and our ability to deliver it cost-effectively, cost-efficiently, all these kinds of things, is certainly one of the more larger challenges that our Nation faces, and I know every Member of Congress goes home to their districts and hears about these challenges all the time, and I think we are all very aware of many of the problems. I personally had the opportunity in a former life, it seems like, a former job that I had previously, serving as a trustee on the board of the second largest healthcare system in my State of Michigan, the St. John's Healthcare System, and I think I certainly profited much from that by just becoming more cognizant, aware of all of the problems that everybody is facing.

You talk to the doctors and the doctors will tell you that they were actually determining which profession they would pursue based on medical malpractice, for instance. Perhaps they didn't want to be an OB-GYN anymore or a pediatrician or what have you. The issue of critical nursing shortages, which is particularly acute in Southeast Michigan, quite frankly. We have, I guess, the fortunate experience of being able to cannibalize our neighbor to the north of Canada. We have about 20 percent of any of the nurses that are in any of our medical institutions are Canadian nurses.

As well, you talk to the various hospitals, so many of them struggling with reimbursement rates, and their ability to collect, having a huge amount of the percentage of their receivables in a float, which a normal business would just not be able to withstand is very commonplace today throughout the industry.

And, of course, we hear about the high accident rates in our hospital facilities or erroneously dispensing prescription drugs. In fact, in Michigan we are, just about as we speak, our State house and State senate is voting on a new piece of legislation that would require our doctors' signatures to be legible about prescription drugs because there have been all of these various incidents that had happened there.

And, you know, I think sometimes you think, oh my gosh, there are all these problems, it is just so overwhelming. Well, the reality is that we are living longer, and we are living better, so how fantastic that we have an opportunity to have these problems, I suppose, and debate these different solutions to it. And I think it is a positive trend line that will absolutely continue. There is nothing more exciting than what is happening in the healthcare profession today, particularly when you think about the information highway and how we are utilizing technology. And I think it is for those of us that are in any level of government, quite frankly, but particularly at the Federal level, to make sure that we do not over-tax or

over-regulate or over-something and stifle the creativity that is happening in the medical field and in healthcare.

And I am very interested and desirous of working with the members of this panel and everybody in the healthcare industry to make sure that our brain trust continue to be very creative and flourish, and I thank you all for coming. I look forward to your testimony.

Mr. PUTNAM. The gentleman from Pennsylvania, Mr. Murphy.

Mr. MURPHY. Thank you, Mr. Speaker, and welcome to the panel.

Too often the matter of information sharing in the healthcare field is overlooked or ignored because of the development of a world-class system, and we face so many obstacles there. Private health systems are reluctant to move forward with electronic record systems because the costs, they say, are prohibitive. And there is no common technology used or recognized by all health systems.

The use and transmission of electronic medical records poses innumerable privacy and security concerns which we have to deal with; however, we have to acknowledge this is an issue that cannot be ignored. Shockingly, of the over 3.7 billion prescriptions issued last year, there were 8.8 million instances of serious illness resulting from drug errors. Medication-related errors or adverse drug events are one of the most common types of medical errors and one of the greatest threats to patient safety. I believe the CDC estimated about 7,000 U.S. deaths occur each year as a result of medication errors. On average, medication errors increase patient hospital stays by 2 to 5 days and increase medical bills by nearly $6,000 a person.

Medication errors not only are harmful to patients, but are financially costly to healthcare providers. Resources that could be spent on direct services are instead diverted to counteract adverse drug events. Resources that could be used to improve healthcare end up going to pay for higher insurance premiums because of the problems that come after this with lawsuits.

This issue goes beyond personal healthcare. How ready is our health system infrastructure for a widespread health epidemic at terrorists' hands? Even if only one life is lost due to the inability for community, State, and national health and emergency management systems to communicate in times of emergency, that is one life too many.

The failure to use information technology in the healthcare field is unacceptable and must be addressed not tomorrow, but today. It is inexcusable and worrisome that this country is not leading the world in the widespread use of health information technology, and I fear that if this Congress does not do more to encourage a new road for our healthcare systems, future generations will question what we were waiting for.

For that reason, Mr. Chairman, I applaud you in calling this hearing. It is extremely important, it is indeed one of making a difference in life or death. Thank you.

[The prepared statement of Hon. Tim Murphy follows:]

OPENING STATEMENT BY REP. TIM MURPHY, PA-18

Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

"Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

July 14, 2004

Too often, the matter of information sharing in the health care field is overlooked and ignored because the development of a world class system faces so many obstacles.

Private health systems are reluctant to move forward with electronic records systems because the costs are prohibitive; there is no common technology used and/or recognized by all health systems; and the use and transmission of electronic medical records poses innumerable privacy and security concerns.

However, this is an issue that can no longer be ignored. Shockingly, of the over 3.7 billion prescriptions issued last year, there were 8.8 million instances of serious illness resulting from drug errors.

Medication related errors, or adverse drug events, are one of the most common types of medical errors and one of the greatest threats to patient safety, with an estimated 7,000 U.S. deaths occurring each year as a result of medication errors. On average, medication errors increase patient hospital stays by 2 - 5 days and increase medical bills by nearly $6,000 per person.

Medication errors not only are harmful to patients, but are financially costly to healthcare providers. Resources that could be spent on direct services are instead diverted to counteract adverse drug events.

This issue goes beyond personal health care. How ready is our health care infrastructure for a widespread health epidemic at terrorist hands? Even if only one life is lost due to the inability for community, state, national health and emergency management systems to communicate in times of emergency, that is one life too many. The failure to use information technology in the health care field is unacceptable and must be addressed – not tomorrow, but today.

In an age where I can pay my bills without ever writing a check, I can ride the Metro without ever purchasing a paper ticket and that very same Metro pass can also be the key to my office, it is inexcusable that this country is not leading the world in the widespread use of health information technology. I fear that if this Congress does not do more to encourage a new road for our health care systems, future generations will question what we were waiting for.

Mr. PUTNAM. I thank all the Members for their opening statements. We will move to the administration of the oath. If the witnesses will please rise and raise your right hands.

[Witnesses sworn.]

Mr PUTNAM. Note for the record that the witnesses responded in the affirmative.

We will move directly to testify, beginning with Dr. Gingrich. Dr. Newt Gingrich served the Sixth District of Georgia in the U.S. House of Representatives for more than 20 years and served as Speaker of the House from 1995 to 1999. Since his time in Congress, Dr. Gingrich has become an outspoken advocate for a better system of health for all Americans. His leadership in the arena helped save Medicare from bankruptcy, prompted FDA reform to help the seriously ill, and initiated a new focus on research prevention and wellness. His contributions have been so great that the American Diabetes Association awarded him their highest nonmedical award and the March of Dimes named him their 1995 Georgia Citizen of the Year. Today he serves as a board member on the Juvenile Diabetes Foundation.

In his book, Savings Lives and Saving Money, Dr. Gingrich speaks directly on many of the issues at the heart of today's hearing. He describes a vision of a 21st century system of health and healthcare that is centered on the individual, prevention-focused, knowledge-intense, and innovation-rich. To foster such a modern health system that provides better outcomes at a lower cost, Dr. Gingrich launched the Center for Health Transformation.

Dr. Gingrich is CEO of the Gingrich Group, a communications and consulting firm that specializes in transformational change, with offices in Atlanta and Washington. He serves as a senior fellow at the American Enterprise Institute here in Washington; a distinguished visiting fellow at the Hoover Institution at Stanford University in Palo Alto, CA; the honorary chairman of the Nano Business Alliance; and is an advisory board member for the Museum of the Rockies. Dr. Gingrich is also a news and political analyst for the Fox News Channel. He received his bachelor's from Emory and a masters and doctorate in modern European history from Tulane.

Welcome to the subcommittee. We are delighted to have you, and you are recognized. Thank you.

STATEMENTS OF HON. NEWT GINGRICH, FORMER SPEAKER OF THE U.S. HOUSE OF REPRESENTATIVES, THE GINGRICH GROUP; KAREN S. EVANS, ADMINISTRATOR OF E-GOVERNMENT AND INFORMATION TECHNOLOGY, OFFICE OF MANAGEMENT AND BUDGET; DAVID A. POWNER, DIRECTOR, INFORMATION TECHNOLOGY MANAGEMENT ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE; AND DR. CLAIRE V. BROOME, M.D., SENIOR ADVISOR TO THE DIRECTOR FOR INTEGRATED HEALTH INFORMATION SYSTEMS, CENTERS FOR DISEASE CONTROL AND PREVENTION, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Mr. GINGRICH. Thank you, Mr. Chairman. I want to thank all the members for allowing me to be here. I have submitted testimony

for the record. I would like to summarize key things, particularly in response to the statements that have already been made.

This is a very, very important topic, and it is a very bipartisan topic because it goes literally to saving lives. I recently had the opportunity to keynote a conference at Brown University, chaired by Congressman Patrick Kennedy, and I think we both found that there was a great deal of common ground that people of all backgrounds could come together on.

It is particularly important because of the understated threat of a biological weapon. In Savings Lives and Saving Money we had an entire chapter that Commander Bill Sanders of the Navy helped develop as a fellow at the American Enterprise Institute, and if we get hit with a serious biological weapon, we could literally lose millions of people. And whatever you think of September 11, however horrifying it was to lose 3,100 Americans, I think almost nobody has come to grips yet with how dramatic and how serious this problem could be.

I must say that President Bush has talked about it, Vice President Cheney has studied it, and Secretary Thompson has done a remarkable job of organizing efforts at the Department of Health and Human Services and has probably the finest command center in the world today which would be responsive to a biological crisis, but below that the rest of the system is still not prepared. I also have to say that Dr. Gerberding at the Center for Disease Control and Dr. Clancey at the Agency for Health Research and Quality have also played a major role in trying to think this through.

Things like the Consolidated Health Informatics initiative are the right start, but the Congress should encourage them to accelerate dramatically the development of standards. At the Center for Health Transformation we recently held a workshop on initiatives and incentives for better information technology, and a very substantial number of the people participating said that getting standards set—this is exactly like the railroad era, where you had to change trains at every State border because they didn't have a common standard, and so the trains couldn't run on the same rails. I cannot overstate the importance of getting to a single standard, making sure it is flexible and can grow, can evolve, but, nonetheless, that we have a starting point that is common. You see this with automatic teller machines worldwide, you see it with cell phones; all sorts of things people have solved this problem. We need to do it with health information.

I also want to praise the President and Secretary Thompson for appointing David Brailer to be the first real leader on a governmentwide basis, and I would urge the Congress to look very seriously, as a first key step, at creating a permanent national health information technology coordinator and giving them some substantial ability to have budget review authority. Just creating the office without power doesn't get the job done. But the fact is the Government is the largest purchaser of healthcare in the world, and if it were also the smartest purchaser of healthcare in the world, we would have a transformation to an information system almost overnight, because every player would have to transform in order to meet government purchasing. I will come back to that.

I think there are a couple of principles about the threat, and I want to say this very directly. Paper kills. With all due respect to those States which are trying to get doctors to print legibly, if they spent the same amount of time as Congressman Murphy is trying to get them to do, getting doctors to use e-prescribing, the savings in lives would be staggering. Paper prescriptions kill. Paper records kill. And if there is a real emergency, they are going to kill a lot of people, probably in the millions if it is a biological threat. So start with the idea anywhere you see paper you are seeing an obsolete system. And the question is how many lives are we willing to lose before we change the system.

Now, in aviation—I used to serve in the Aviation Subcommittee—we have very high standards. In aviation, if a plane goes down with 135 people, the National Transformation Safety Board reviews it, the Federal Aviation Administration reviews it, the manufacturer reviews it, the airline pilots review it. It is a concerted effort to say your life matters if you are in a plane. By contrast, the institute of medicine says we kill between 44,000 and 98,000 people a year through medical error, we kill at least 9,000 people a year through medication error, and we all shrug and go "isn't that unfortunate." But it is really not. It is the failure to impose systems of competence and systems of responsibility.

I want to give you five specific principles for the solution. First, do not create a series of silos. There has been a terrible tendency in the last 3 years, after September 11, to want to get by on the cheap by getting to an information system for a national emergency. When President Eisenhower, in 1955, proposed the National Defense Highway Act specifically designed to enable us to get people out of cities if we were threatened with nuclear war, he did not say let us build that as a separate highway and we won't let anybody on it except in wartime. He said let us create that as an interstate highway system which, by the way, will also enable us to use it everyday in peacetime. And that is why middle class Americans can travel across this country with remarkable efficiency, because of a bill that was a national defense bill.

Now, our goal should be a 21st century intelligent health system in which every American is tied into the system electronically, every American has an individual health record, and every American knows that the minute there is a real crisis we will all be wired together and will respond to the biological threat in the shortest possible time. And that is a national system, it is not simply a national defense system. But it ought to be built in the name of national security.

Second, the Government, as the largest purchaser, should become the smartest purchaser. If the Federal Employee Health Benefit Plan, Medicare and Tricare decided that every individual was going to have an individual health record, electronically, Web-based, encrypted, HIPPA-compliant, exactly the model the English are launching this year, very rapidly every provider would be doing it because the Federal Government is such a huge purchaser that to meet the Federal Government standard they would have to do it.

By the way, just for the record, we have had four firms indicate they would bid $10 per record; that is, if you have 44 million people

on Medicare for $440 million, every single person could have an electronic record. You could sustain it for about $3 a year, or one latte a year. Now, electronic medical records with huge bandwidth are much harder, but a Web-based individual health record would be very inexpensive and would overnight change the volume of information available in America, and should start, by the Government being the largest purchaser, saying why don't our own citizens and our own staff have it.

Third, there should be a radical increase in the potential research data available to the National Institutes of Health, to CDC, and to the Agency for Health Research and Quality, and that should lead to the development of an evidence-based health system of extraordinary capabilities. If you imagine how many million life years of data are currently sitting in the Medicare financial data base that are not being used, it makes the Framingham study, which is the biggest longitudinal health study in history, trivial by comparison. And yet we have no really large scale—I must say that Dr. Zahouni has been trying very hard at NIH and that Dr. Clancey has been trying hard at the Agency for Health Research and Quality, but compared to the scale of the opportunity, we need a much larger effort to develop the kind of data use and the kind of data focus. Currently, that is what we do after we pay for everything we are already paying for that we have been doing forever, and we have no notion of how big the opportunity is, I think, to get dramatically larger data bases and to lead to dramatically better care.

Fourth, I think it is important in the Congress to pick up on the President's challenge and to insist that lives matter. President Bush has given more speeches on health information technology than all of the previous presidents combined. It doesn't get page 1, it is not the sort of thing the news media understands how to cover, but he has given speech after speech on the importance of health information technology; he has called for every American to have a health record that is electronic and online. And I think it is important to start with the premise that lives really matter, and I would argue that it is important to challenge both the Office of Management and Budget and the Congressional Budget Office to use private sector experience in scoring.

The Agency for Health Research and Quality reported last June that medication errors and other medical errors cost about $100 billion a year. Yet it is impossible to score getting to a better system as though it was going to save any money at all, a single penny.

My last point. As you are developing this, we need to really understand we are in the 21st century. We don't need a massive investment in a 1935 public health service. What we need to invent is a virtual public health service. There are 55,000 drug stores that people are used to going to that they can find easily. All 55,000 should be wired together into a virtual public health service. There are retired doctors and retired nurses and retired veterinarians we will need dramatically if we have a really big health crisis. They should all be wired into the system.

And, finally, and this may strike you as a bit odd, but it illustrates the scale of the problem. If we have a major nuclear event,

we will literally need every long-term care facility within 100 miles and every veterinarian's facility within 100 miles, because you will lose all the downtown hospitals. That is actually based on a University of Pennsylvania study. And that would suggest to me that you want all of these systems wired together routinely every morning, just as automatic teller machines are wired together, just as e-ticket systems are wired. These are not new things. All we are trying to do is bring health into the 1980's.

But I think with this subcommittee's leadership and with the President's continued leadership and Secretary Thompson's continued leadership, we might actually bring the system into the 21st century, and then we would in fact be substantially safer.

Thank you, sir.

[The prepared statement of Hon. Newt Gingrich follows:]

Testimony of
Former Speaker of the House
Newt Gingrich

For

The United State House
Committee on Government Reform

Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?

Wednesday, July 14, 2004

Today's Reality

- Suffering
  - 2 million hospital induced illnesses every year[1]
  - 1.5 million nursing home induced illnesses every year[2]
- Death
  - 7,000 people die every year from medication errors *alone*[3]
  - 44,000-98,000 people die every year from medical errors in hospitals alone[4]
  - 88,000 people die every year from hospital induced illnesses[5]
  - An individual is 2,000 times more likely to die in a hospital than in an airplane[6]
- Money
  - $100 billion a year linked to errors.[7]
- Ignorance kills.
- Lack of individual involvement in personal healthcare kills.

What if there was a National Emergency

- 1918 Flu

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[1] CDC
[2] CDC
[3] California Healthcare Foundation, Innovations in Physician Prescribing, October 2001
[4] Institute of Medication, *Crossing the Quality Chasm*, (National Academy Press, 2001): 145
[5] As reported on www.cdc.gov/ncidod/eid/vol4no3/weinstein.htm as of 9 July 2004
[6] Figure from American Hospital Association **Figure accumulated from NTSB reports since 9/11 and traffic figures of the six major U.S. commercial airlines: Delta, American, U.S. Air, United, Continental, and Northwest
[7] AHRQ, *Estimates of the Impact of Selected Health Information Technologies on Quality and Costs in Inpatient and Outpatient Settings*, June 28, 2003

- "The largest epidemic of the 20th century was influenza in 1918—it killed more people worldwide than were killed in the four years of the First World War."[8]

- "We must build a capacity to operate in real time to identify, analyze, and respond to a new-engineered bio-weapon we have never encountered before."[9]
- "A real bio-threat will require an information technology investment that connects every doctor, every nurse, every pharmacist, every veterinarian, every hospital, every nursing home, and every pharmacy in the country in real time. As a country, we need to commit to a one-time block investment to modernize the entire IT system for the entire health system."[10]
- National Strategic Study Group
  - "Biological warfare, bio-threat, is the largest threat to the human race, a substantially bigger threat than nuclear war. If the United States is hit with an engineered biological for which no vaccines are available we are in for problems of colossal proportions."[11]
  - "In fact, biological threats, especially the threat of an engineered lethal bio-weapon for which we would have no vaccines, no rapid diagnostic tests and no drug treatments are so great that we should consider the preparation of a defensive system against an engineered biological the highest priority in the American national security system and the most important job facing the new Department of Homeland Security."[12]

The Solution is a 21st Century Intelligent Healthcare System

- The federal government needs a strategy to move as fast as possible to a 21st century intelligent healthcare system with the first step being an electronic health record for every American.
- The right response to this opportunity is to plant seeds – not build silos.

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[8] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003) :278

[9] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003) :278

[10] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003) :286

[11] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003): 275

[12] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003): 275

- It is very important that while we take specific steps for a national emergency and for intergovernmental information sharing and emergency response that we not build a new silo where we invest a lot of money in a national defense only component.
- We should leverage our investment to accomplish multiple goals, not just bio surveillance.
- "Designed correctly, the 21st century Biological Security Information Technology Investment is the direct parallel to the proposal by President Eisenhower to build an interstate highway system as both a national security requirement and as an enormous asset for everyday life."[13]

- We need seeds – not silos, because:
  - We are permanently at risk of being attacked by a biological weapon or a natural biological outbreak resulting in lives lost until we have a 21st century intelligent healthcare system.
  - We are killing as many as 300 people a day due to medical errors in hospitals alone and wasting billions of dollars.
    - Paper kills.
- Health information technology saves money.
  - The Center for Information Technology Leadership indicates the US could save $44 billion annually by reducing medication, radiology, lab, and hospitalization expenditures with the nationwide adoption of the computerized patient order entry ***ALONE***.
  - Agency Healthcare Research and Quality (AHRQ) released a literature review – June 28, 2003 – that cited savings of over $100 billion.[14]
  - Current expenditures would prohibit a long-term goal of balancing the budget.
- In summary – all information technology should be universally adopted by all healthcare providers, including hospital, healthcare providers and nursing homes.

Understanding a 21st Century Intelligent Health System

- 3 parallel layers of change
  - Individual change
  - Institution/provider change

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[13] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003): 288

[14] AHRQ, Estimates of the Impact of Selected Health Information Technologies on Quality and Costs in Inpatient and Outpatient Settings, June 28, 2003

- Science changes everything
  - National Cancer Institute Vision
- Change is occurring all around us
  - Patient safety and patient outcomes
  - Information and communication technology
  - A system and culture of quality
  - Individual knowledge, responsibility and power to choose
- The characteristics of a 21st century intelligent health system (See Appendix A, Triangle Model of Health and Healthcare Transformation)
  - Individual Centered
  - Accuracy
  - Real-time Access
  - Transparency of Information
    - Catalysts
      - Information technology
      - Communications
      - Nano-scale science and technology
      - Quantum mechanics
      - Biology
    - The areas that will be most affected by change from 2004-2030
      - National Security
      - Education in general with an emphasis in math and science
      - Health and healthcare
      - Inventing entrepreneurial public management
      - Tax code
      - Litigation reform

Examples of successful Health Information Technology solutions

- E-prescribing
  - "Following the installation of a computer prescribing module at Oregon Health and Science University Hospital emergency department, prescriptions were three times less likely to include medical errors and five times less likely to require pharmacist clarification than handwritten prescriptions."[15]

[15] iHealthBeat, California Healthcare Foundation, November, 2002.

  - Medication Errors could be cut by 55% if physicians switched to writing electronic prescriptions, according to a report by Institute for Safe Medication Practices.[16]
  - A study by Tufts Health Plan found that electronic prescribing saved 2 hours a day per physician.[17]
- Bar-coding
  - Sutter Health implemented a pilot program and found a 12.9% error rate without bar coding. Sutter Health would experience the extrapolated savings of this technology if they provided it to all of their hospitals and it was used for their approximately 32 million doses annually. They could save about $300 million per year.
- Electronic Medical Records
  - Mayo Clinic saves $21.7 million annually by using a comprehensive medical record and ordering system. The savings result from a reduction in time to route and pull paper records, real-time electronic access to lab results, elimination of the processing of paper charts, reducing un-billable tests, etc.
- National awareness of outbreak or response instructions to care providers
  - A platform on which to build would be that of Gold Standard Multimedia in Florida. Medical doctors have access to Medicaid patients' drug claim information wirelessly bringing real time, patient-specific medication histories and clinical drug information to the point of care optimizing medication management.
  - In 3 months, the average net reduction in number of prescriptions written per doctor resulted in at least 14 fewer prescriptions with savings averaging about $700 per doctor.

Health Information Technology Adoption Rate needs to be dramatically accelerated

- It is slow: Despite the $20 billion in health care-related information technology expenditures in the United States in 2001, less than 10% of US hospitals had adopted electronic medical records.[18]

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[16] Prescription Conniption: Prescription-benefit companies; plan for an online drug prescribing system could eliminate doctor's chicken-scratch handwriting and boost profits. Carolyn Marshall. Netscape Business 2.0 June 2001.
[17] AM News, October, 2002
[18] 1 Goldsmith, J; Blumenthal, D; Rishel, W, *Federal Health Information Policy: A Case of Arrested Development*, Health Affairs (July/August 2003)

- We allowed a pace of change in healthcare that we would never accept in other sectors of American society. Example: In aviation, safety is not determined by what the quarterly report permits.
- Lack of a binary system means there is little direct consumer demand.
- Lack of incentives: the current system does not financially reward the information technology investor.

Can it be accelerated and how?

- The Center for Health Transformation forum sponsored by Booz Allen Hamilton in June discussed incentives resulting in a white paper: *Creative Incentive for the Nationwide Adoption of Interoperable Health Information Technology*: (See Appendix B)
    - Anne Woodbury, Chief Health Advocate of the Center for Health Transformation and Forum leader said, "Over 51% of the 150 varied stakeholders who participated believe that with the right incentives, the US could achieve nationwide EHR adoption within 1-3 years. The group identified data standards and financial support, such as a low interest federal loan program modeled after the direct Federal Student Loan Program, to be the most powerful incentives."
        - 47% of the respondents reported that creating data standards is the most necessary first step to accelerating interoperable health information technology adoption.
- Incentives
    - Congress should issue nationwide data standards.
        - The electronic health record will work only if substantial numbers of doctors, individuals, and hospitals have them. The government must take positive action to set a standard that encourages widespread participation.
        - This includes funding and outsourcing a certification program that certain health information technology applications meet these standards.
    - Reduce the frequency of surveying oversight for healthcare facilities that use electronic health records and have no quality of care deficiencies

- Fund a training program for healthcare providers and staff to optimize the investment in and the interoperability of a new information technology system
- Decrease malpractice insurance
  - Subsidize, perhaps though tax credits, for three years, the amount insurance companies reduce their malpractice premiums for healthcare providers who use certified health information technology applications
  - Pass a cap on the liability of a healthcare provider who uses certified health information technology applications
- Low interest Federal Loan Program modeled after the Federal Student Loan Program
  - American Journal of Medicine reported a new benefit per provider using electronic medical record over 5 years would be approximately $86,000. Over 10 years it is $330,900. (See Appendix C, AMGA Health Information Technology Funding)
- Provide consumers with financial incentives, such as decreasing co-pays and deductibles, if the individual chooses a health provider who uses a certified health information technology application such as electronic health record/bar coding/e-prescribing/decision support
- Increase reimbursement or provide a flat bonus to healthcare providers who electronically prescribe
- Restore the 5% increase in Medicare reimbursement to physicians only when they provide proof that they are cooperating with the government in using the IHR plan to save $9 billion a year for Medicare.
- Provide bonus payments to health providers for improved clinical outcomes and/or using some form of health information technology, such as electronic health record or bar coding
- Provide hospitals who make certified information technology investments tax deductions
- Incorporate and/or mandate health information technology components into the design of all new safety and quality programs and pilots for Centers for Medicaid and Medicare Services, Office of Personnel Management, Veterans Administration, Department of Defense,

National Institute of Health, Centers for Disease Control that involve direct patient care

- Example: The Medicare Modernization Act created a "Welcome to Medicare" physical for new beneficiaries starting Jan 1, 2004. Why not increase the reimbursement, or make reimbursement contingent upon filing of an electronic health record for the beneficiary?

This will fail without adequate funding from Congress.

- ***This is about individual safety!***
- We cannot rely on the private market to set an interoperability standard of this proportion for a health record. History has proven that large institutions such as hospitals cannot find a standard among themselves; therefore government must step in to set precedents.
- The Federal Government needs to get serious about this.
- Evidence of lack of serious monetary commitment to solutions in workplace safety, food supply safety, and transportation safety:
  - In 2002, there were 5524 fatal work incidents[19]. The total budget for Occupational Safety and Health Administration (OSHA) that year was $457.6 million[20].
  - In 2002, motor vehicle crashes claimed nearly 43,000 lives[21]. The same year, the National Highway and Traffic Safety Administration's budget was $424 million[22]. Federal Motor Carrier Safety Administration (FMCSA)'s budget was $361 million.[23]
  - In 2002 we spent $716 million for the food Safety and Inspection Service, the USDA division charge with keeping our food supply safe.
  - The 3 examples cited above total just under $2 billion in funding.
  - The Federal Aviation Administration budget in 2002 alone was $13 billion.
- In contrast:

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[19] 2002 on the Forbes website. They cite the US Department of Labor and Statistics. The article is at http://www.forbes.com/work/careers/2004/05/27/cz_cc_0527fataljobs.html
[20] http://www.aflcio.org/issuespolitics/ns0205a2002.cfm
[21] http://www.dot.gov/bib2005/nhtsa.pdf
[22] http://www.dot.gov/bib2004/nhtsa.html.
[23] http://www.dot.gov/bib2004/fmcsa.html

- Healthcare lags behind every industry except K-12 education in IT investment. Healthcare spends 2.3% of their budget whereas, financial services spend 13.8%, manufacturing spends 7.7%, and communications spends 7.5%.[24]
- AHRQ is managing $100 million in grants in FY04 to support the implementation of health information technology.
- Mayo's information technology budget in 2002 was $107 million – This is more than the entire AHRQ grant budget.
- There is a new position within the Department of Health and Human Services – the National Health Information Technology Coordinator. The Executive Order that created his position instructs the Coordinator to develop a strategic plan that does "[n]ot assume or rely upon additional Federal resources or spending to accomplish adoption of interoperable health information technology."
- The scale of the challenge (biological disaster, medical mistakes, and high cost) requires that we dedicate 1 percent ($7.9 billion) of our total federal healthcare spending ($7.9 trillion dollars[25]) to the creation of interoperable health information technology.

Initial Steps

- Design a payment structure to incentivize adoption of health information technology:
  - The National Health Information Technology Coordinator office should become a federal health information technology agency with statuary authority to oversee and manage technologies, financing and actions in and outside the federal government.
  - Furthermore, the Coordinator should have the responsibility to undertake a three-year project to transition the federal government to state of the art technology in both its internal health information technology and that of suppliers.
  - Shift the payment structure of the entire system to incentivize better outcomes at lower costs so people have

[24] Gaudin, Sharon. IT spending is low in healthcare industry, Network World (Dec 18, 2000) (Based on a Gartner Group study.)

[25] http://www.cms.hhs.gov/statistics/nhe/default.asp?#contact as of March 24, 2004

an interest in being effective and efficient, not in transactions as is currently the case.
  - Financially incentivize individuals to choose healthcare providers that use health information technology solutions. (I.e., e-prescribing and electronic medical records)
  - The government as the largest healthcare purchaser, (Department of Defense, Veterans Affairs and Office of personnel Management) should incorporate interoperable information technology in its programs and purchasing. For example, putting health information technology in new program designs and new requests for proposals.
  - Subsidize the investment of new health information technologies until there is universal adoption (i.e., individual electronic medical record).
  - Design a low interest loan program for health information technology for healthcare providers modeled after the student loan program.
- Develop a virtual public health system
  - Pharmacy is a largely untapped resource; in fact, there are over 55,000 chain and independent pharmacies.
  - "The sheer volume of patient need in the case of a contagious outbreak will require the mobilization of every medical person and every medical facility that can be made available. There should be a Public Health Service Reserve Corps, parallel to the reserve and National Guard program we have for the military. Every doctor, nurse, pharmacist, and veterinarian in the country, including retired professionals, should be enrolled in the corps and available by email at a moment's notice. Every long-term care facility in the country should be enrolled as an emergency facility, the way commercial airliners are in the Civilian Reserve Air Fleet (CRAF) program. They should be paid to develop a plan for moving their healthiest and most stable residents to safe places so the facility's beds could be used in a bio-attack."[26]
- Devise a plan to react quickly in the event of a biological epidemic. We need to have processes for real-time discovery, development and delivery streamlined for antidotes, vaccines and procedures

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[26] Gingrich, Newt, Dana Pavey, and Anne Woodbury, *Saving Lives and Saving Money,*(The Alexis de Tocqueville Institution, 2003): 288

- Incorporate health information technology in the foundation and design of every federally funded health study such as the National Children's Study[27]
- Require interoperability of all federal databases
- Develop laws that give individual's ownership of their personal health record. Healthcare providers should be required to provide the data

[27] www.nationalchildrensstudy.gov

Appendix A

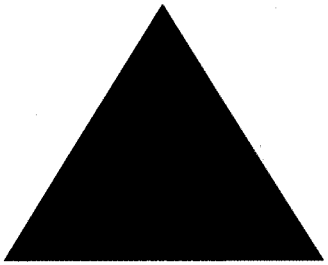
Triangle Model of Health and Healthcare Transformation

Center for Health Transformation

www.healthtransformation.net

Triangle Model of Health and Healthcare Transformation

**Individual-Centered – Incentive - Psychology-
Empowerment – The Right to Know Information
about Price, Quality, Providers, and Personal Health Status**



**Prevention - Early Detection-
Self Management – Best Practices**

**IT- Quality - Expert
Systems**

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Appendix B

Creative Incentive for the Nationwide Adoption of Interoperable Health Information Technology *White Paper*

July 2004

Creative Incentives for the Nationwide Adoption of Interoperable Health Information Technology

White Paper

Center for Health Transformation

The Center for Health Transformation
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July 2, 2004

Dear Reader:

Medical errors are the fifth leading cause of death in America. The Institute of Medicine (IOM) estimated that between 44,000 and 98,000 people die every year in hospitals due to preventable medical errors. This death rate would be the equivalent of one Washington-to-New York airplane shuttle crashing every day. In contrast to the federal response and media coverage that accompanies a single commercial jet crash or the threat of an outbreak of contaminated beef, the government, media, and consumer advocates are comparatively silent when it comes to medical errors. Nevertheless, government leaders can take effective action to protect consumers from medical errors by utilizing their regulatory and legislative authority, as well as leveraging their healthcare purchasing power, to transform the nation's health system into a 21st Century Intelligent Health and Healthcare System.

The foundation of a 21st Century Intelligent Health and Healthcare System will be reliable patient safety solutions. In this 21st Century health system healthcare professionals and patients will utilize an information delivery system that provides the most current information about an individual's health status. In addition, this information will be cross checked against smart information based quality control systems that should eliminate certain types of common errors altogether or prevent other types of errors before they occur. Widespread adoption of interoperable health information technology is a cornerstone of creating a 21st Century Intelligent Health system.

It is time to move beyond HIT studies and pilots into a rapid implementation phase and the government is a decisive player. This paper is designed to help policymakers take significant action this year to advance a 21st Century Intelligent Health system that will save lives and save money.

Sincerely,

Newt Gingrich
Founder, The Center for Health Transformation

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BACKGROUND

The United States Department of Health and Human Services (HHS) has embraced a significant objective – to develop a nationwide health information technology infrastructure to improve patient safety. Such an infrastructure would encompass a set of standards and secure networks that would allow a clinician or health delivery facility to gather and disseminate relevant information by computer network – such as test results, x-rays and medical history as well as clinical guidelines, drug labeling and current research findings – to best treat an individual patient. As a result, the healthcare industry and its various stakeholders are experiencing a transformation with the adoption of health information technology (HIT)[1] solutions. The ever-accelerating advances in technology are producing a qualitative change in the nature of healthcare delivery. For example, according to Evanston Northwestern Healthcare in Illinois, an electronics medical records system has reduced medical errors and the time needed to obtain test results, and is expected to improve financial performance through savings from higher reimbursements and collection of co-payments[2]. This shift promises dramatic increases in patient care and health outcomes, as well as financial benefits to providers. Despite initial evidence of profitability and improvements in safety and efficiency, adoption rates of HIT solutions are slow.

The Federal government, including the Congress, the Executive Office and agencies such as HHS, Department of Veteran Affairs (VA), Department of Defense (DoD), is aggressively working to accelerate the adoption of various HIT components. HHS is currently faced with many decisions regarding the necessary measures for implementation of an interoperable HIT infrastructure, as well as the allocation of funds for HIT programmatic initiatives. President Bush's Executive Order, issued on April 27, 2004, announced the goal of every American having an electronic medical record (EMR) within ten years[3].

As a first step toward achieving this goal, HHS was tasked with establishing the position of National Health Information Technology Coordinator to provide leadership of the development and nationwide implementation of an interoperable HIT infrastructure to improve the quality and efficiency of healthcare. HHS appointed Dr. David Brailer as the first ever National HIT Coordinator. Dr. Brailer has encouraged private sector involvement in this public initiative; he recognizes that successful ramp-up of a national HIT infrastructure will require coordinated effort involving appropriate incentives and enablers between the public and private sector to ensure interoperability, utilization and improved healthcare quality and delivery. On May 6, 2004, HHS Secretary Tommy Thompson hosted a HIT Summit and announced the appointment of Dr. David Brailer.

Additionally, the Executive Order mandates a report from HHS within 90 days on options to provide incentives in HHS, VA, and DoD programs and the Federal Employees Health Benefits Program that will promote the adoption of interoperable HIT. Therefore, the impending HHS

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[1] *Health Information Technology includes electronic medical records, individual health records, computerized prescriptions order entry, bar-coding of pharmaceuticals, electronic decision support systems, e-prescribing, etc.*

[2] *"Evanston Northwestern Healthcare Rolls Out Electronic Patient Record System, Setting National Standard for Improving Quality of Care". Evanston Northwestern Healthcare Press Release. May 17, 2004.*

[3] *Remarks by President Bush at the American Association of Community Colleges meeting in Minnesota on April 26, 2004*

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report is the first step in the government's HIT Initiative to catalog the various types of incentives provided by the government that may effectively promote the adoption of interoperable health information technologies.

The lack of readily available, comprehensive, individual-centered health information negatively affects healthcare accessibility and delivery at every level. According to the report from the Institute of Medicine, *Crossing the Quality Chasm*[4]: "If we want safer, higher quality care, we will need to have redesigned systems of care, including the use of information technology to support clinical and administrative processes." The report makes an urgent call for fundamental change to close the quality gap, recommends a redesign of the American healthcare system, and provides overarching principles for specific direction for policymakers, healthcare leaders, clinicians, regulators, purchasers, and others.

The healthcare system in the United States is highly fragmented and compartmentalized which is worsened due to the common practice of storing information in paper-based formats. Each healthcare stakeholder – clinicians, hospitals, pharmaceutical companies, insurers and researchers – collects and maintains critical information in paper files. In an age when vital data can be transferred digitally only a small portion of healthcare data is accessed and transferred electronically. Information that is needed to support patients and clinical decision-making is often unavailable at the point of care; therefore, not allowing routine quality measurement and inhibiting efficiency of health information exchange. The absence of standardized HIT solutions contributes to clinicians unknowingly repeating tests, or advising ineffective or dangerous treatments. Additionally, researchers and public health officials do not have access to aggregate data to track diseases, assess treatment effectiveness and safety, or track data that may be critical in identifying a bioterrorism attack.

Evidence indicates that the secure exchange of medical information will significantly advance our healthcare system – improving healthcare quality and patient safety by reducing medical errors, reducing wasteful and dangerous inefficiencies in the delivery of healthcare, improving administrative efficiencies by reducing paperwork and improving communication, and increasing access to affordable healthcare. The optimal HIT system would:[5]

- Foster quality improvement, the reduction of medical errors, and accelerate the practice of evidence-based medical care;
- Deliver the relevant personal data, clinical guidelines, and administrative information to a medical provider and consumer in order to increase the likelihood of an appropriate medical decision at the time and place of care;
- Decrease overall healthcare costs by improving efficiency, decreasing costly medical errors, coordinating care in a way that makes it easier to detect disease before expensive acute episodes result;

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4 The Committee on Quality of Health Care in America. Crossing the Quality Chasm: A New Health System for the 21st Century (2001). The Institute of Medicine serves as adviser to the nation to improve health. As an independent, scientific adviser, the Institute of Medicine strives to provide advice that is unbiased, based on evidence, and grounded in science. The mission of the Institute of Medicine embraces the health of people everywhere.

5 http://www.healthtransformation.net/Projects/HIT.asp

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- Advance consumerism by enabling more transparent information on healthcare costs quality, and outcomes;
- Connect all caregiver settings including home care, physician offices, long-term living facilities, and pharmacy,
- Guarantee the security and protection of patients' individual health information.

OVERVIEW

This white paper outlines the HIT economic landscape for a provider organization and offers suggestions on what steps policymakers and government leaders can take to provide incentives for nationwide adoption of HIT. This paper also summarizes the findings from key stakeholders on the effectiveness of incentives in promoting the adoption of dependable interoperable HIT systems that offer patients prompt high quality treatment for the twenty-first century.

ECONOMIC LANDSCAPE

The implementation of HIT can result in a positive financial return on investment to the healthcare community. IDC, a global market intelligence and advisory firm, projects that HIT spending in the United States will increase from $15.1 billion in 2002 to $17.3 billion in 2007 among healthcare providers. The Center for Information Technology Leadership (CITL) indicates the United.States. healthcare system could save $44 billion annually in reduced medication, radiology, laboratory, and hospitalization expenditures from nationwide adoption of Computerized Patient Order Entry (CPOE), one component of HIT. CITL studies also suggest that more than 2 million adverse drug events and 190,000 hospitalizations each year could be prevented with the use of HIT.

Similar to users of CPOE, users of EMR perceive that such technologies have had an impact on practice costs. Although in many practices physicians and staff are unaware of actual expenses and cost savings associated with the EMR, those that retired paper-based systems believe they have realized cost savings.[6]

According to a study published in the American Journal of Medicine, the net benefit per provider using EMR over a five-year period would be approximately $86,000. When the implementation timeframe was increased to ten years, the net economic benefit increased to $330,900 per provider.[7] Pursuant to this study, the associated EMR costs include the cost of software and hardware, training, implementation, and ongoing maintenance and support as well as all costs associated with transitioning from a paper based system. The financial benefits include savings in chart pulls and transcription, as well as utilization savings and savings from diminished billing errors. The study indicates the majority of savings, following implementation of EMR, result from

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[6] *Wager A. et. al, "Impact of an Electronic Medical Record System on Community-Based Primary Care Practices". J Am Board Fam Pract 13(5):333-348, 2000. © 2000 American Board of Family Practice.*

[7] *Blackford M., et.al. "A Cost-Benefit Analysis of Electronic Medical Records in Primary Care." The American Journal of Medicine. Volume 114. April 1, 2003.*

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drug expenditures, decreased radiology utilization, decreased billing errors and improved charge capture.

If a provider adopts an EMR system for the reduction of paper chart pulls and transcription costs, the net cost will be $18,200 per provider and if electronic prescribing were added there would be a net benefit of $44,600 per provider. The economic impact on a provider organization varies depending on the level of implementation, the EMR components adopted and the implementation time frame. If adopted and implemented within the guidelines of this study, the implementation of EMR can result in a positive financial return on investment to the healthcare provider.

APPROACH FOR IDENTIFYING INCENTIVES

The use of financial and qualitative incentives will facilitate the promotion of HIT investment, adoption and implementation for healthcare providers. The objective of identifying and categorizing incentives for HIT adoption is to encourage community participation toward viable solutions.

HIT incentives research conducted included:

- Comprehensive research and literature review surrounding the market segments within the healthcare industry to understand how each are reacting to barriers and benefits of HIT adoption
- Feedback from stakeholder groups attending the June 15, 2004 Forum: Creative Incentives for HIT
- Discussions with high-level industry and government decision makers.

The aggregate of these findings reflect stakeholder perspectives on which incentives, both financial and non-financial, should be considered in developing a modern and dependable interoperable HIT infrastructure.

Findings

To encourage buy-in and community participation in nationwide HIT adoption, it's critical to understand stakeholders' perspectives related to barriers and benefits of implementation. Key stakeholder groups participated in a June 15, 2004 Forum to evaluate options. During the Forum, Former Speaker Newt Gingrich, Founder of the Center for Health Transformation (CHT) spoke about transforming the United State healthcare system and the HIT Imperatives. Dr. Anthony Nowlan, until recently, an Executive Director of the National Health Service Information Authority in the UK, provided information related to the lessons learned in implementing a National Health IT Infrastructure. As identified earlier, Dr. David Brailer, National Health Information Technology Coordinator for HHS noted that a successful ramp-up of a national HIT infrastructure would require a well-coordinated effort involving appropriate incentives and enablers between the public

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and private sector to ensure interoperability, utilization and improved healthcare quality and delivery.

As a starting point for discussion, industry incentives for adoption of EMR were consolidated for the key stakeholders to review during the Forum. Table 1 summarizes the high-level perspectives from each key stakeholder group.

Table 1. Stakeholder Groups

Stakeholder Group	Perspective
Payers	Payers are using HIT to become more efficient and responsive to the market by analyzing data collected through EHR. They have been leaders in experimenting with changing the "face-to-face" based delivery system to reflect that many simple diagnoses and follow-up visits can be addressed through HIT rather than office visits.
Hospitals Clinicians	Providers are facing increasing financial pressure, as costs remain high. Providers would like to improve healthcare delivery and quality though use of HIT. Provider adoption would increase if they could be assured that the system is interoperable, can easily adapt to changing technology, and has appropriate training and support.
IT Solutions	Vendors will be active in creating markets to promote their products. These players have provided capital and assistance to ramp-up HIT adoption.
Pharmaceutical Manufacturers	Pharmaceutical manufacturers have disease-management programs to build communities of consumers centered on particular drugs. Pharmaceutical manufacturers are integrating technology into the clinical workflow, in some cases, introducing new technology for free into doctors' practices.
Employers	Employers want to comparison shop for health plans and want their beneficiaries to be able to comparison shop on quality and price for health services; employers have also been active players in providing incentives for HIT adoption.
Long Term Living Facility	Long-term care providers recognize that HIT adoption would help streamline the annual survey process, promote quality of care and reduce the cost of the program.
Consumers	Consumers welcome HIT solutions if their personal privacy can be assured and protected.

After the key stakeholders reviewed the industry incentives, stakeholder breakout groups were organized and each group proposed incentives and enablers that would promote adoption of HIT, and support interoperability, and improved healthcare quality and delivery. Industry expert facilitators were provided for each of the stakeholder breakout groups to maximize the outcome. Each breakout group summarized their key findings in a presentation, which the facilitator shared with the larger group.

During the breakout group sessions, key stakeholders reviewed a list of implementation enablers that could facilitate incentive implementation. Table 2 displays a list of enablers that may be necessary to put in place incentives for adoption of interoperable health information technology:

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Table 2. Implementation Enablers of Health Information Technology (HIT)

IMPLEMENTATION ENABLER	EXAMPLE
Legislation	• Repeal / Amend existing legislation • Enact new legislation
Regulations	• Translation of laws implementing standards promulgated by the appropriate Federal department
Federal Funding	• Appropriations providing necessary start-up assistance and capital • Government sponsored grant initiatives
Private Sector Business Practices	• Modification of existing business practices; leverage skills, expertise and opportunities to improve its strategic position with HIT
Private Funding	• Philanthropic funds put forth by private sector
Compliance / Audit	• Requirements to ensure compliance with new standards
Patient Participation	• Increased patient involvement in their own clinical research and choices in healthcare providers

During the Forum, the key stakeholders were surveyed to gain additional insight on their point of view.

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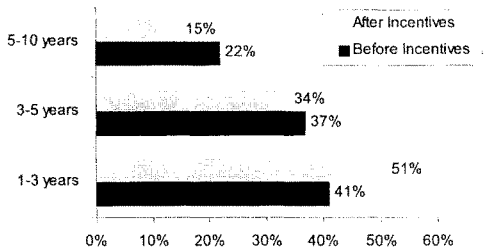
Questions: What is a reasonable time frame to expect ramp-up of national EHR adoption? If your HIT incentives are executed, what is a reasonable time frame to expect ramp--up of national EHR adoption?

51% of respondents (51%) reported that after their HIT incentives were in place, they would expect the ramp-up time for EHR adoption would be 1 – 3 years. Even without their HIT incentives in place, 41% of respondents reported that it would take 1 – 3 years to adopt EHR.

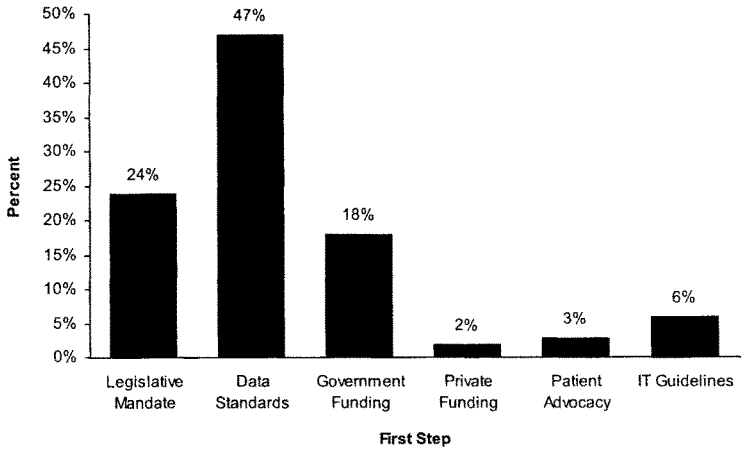
Figure 1. Ramp-Up Time for EHR Adoption



Q: What is the first step in creating an interoperable healthcare information technology system?

The 47% of respondents reported that creating data standards is the most necessary first step in creating an interoperable healthcare information technology system.

Figure 2. First Step in Creating HIT



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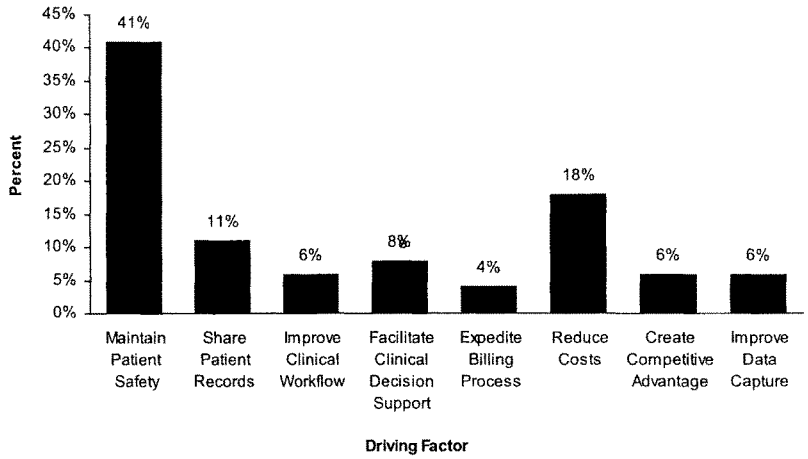
Q: What factor is driving the need for EHR Systems within your organization?

The 41% of respondents reported the maintaining patient safety is the top factor driving the need for EHR Systems within their organization.

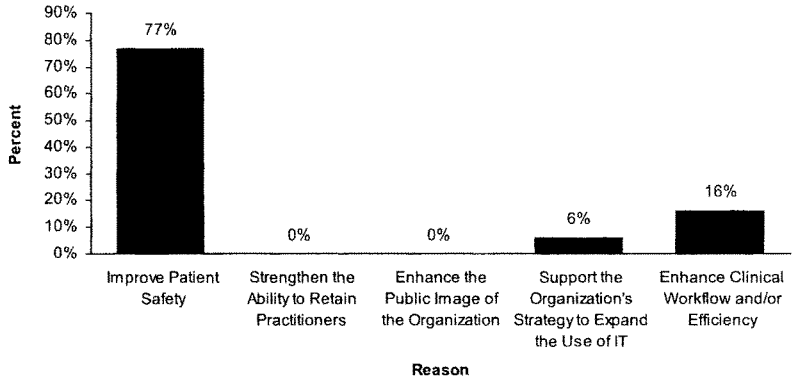
Figure 3. Factors Driving EHR Systems Need



Q: What is the most critical reason for adopting EHRs within your organization?

77% of respondents reported that improving patient safety is the most critical reason for adopting EHRs within their respective organizations.

Figure 4. Reasons for Adopting EHR



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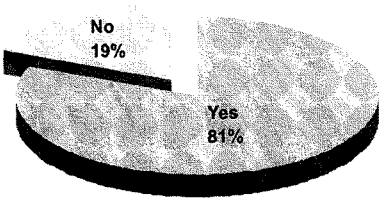
Q: Would you personally choose a healthcare provider with EHR, or other forms of HIT, over one without an existing system?

81% of respondents reported that they would personally choose a healthcare provider with EHR rather than one without EHR.

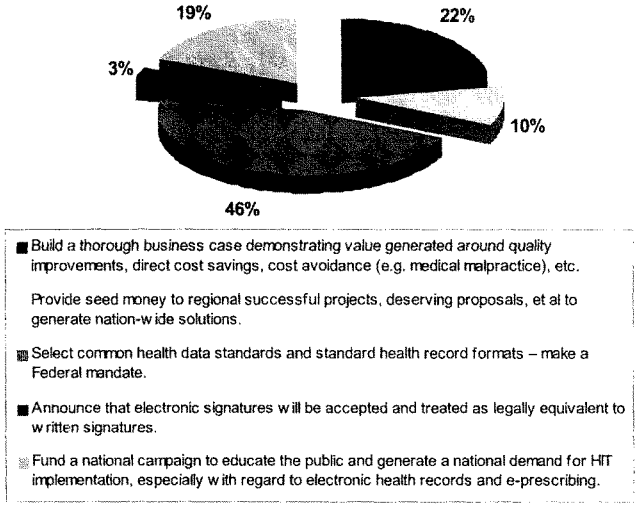
Figure 5. Percent Who Choose Providers with EHR



Q: If you were the President and had no budgetary constraints, how would you leverage HIT to start saving lives?

46% of respondents reported that providing seed money to regional projects, deserving proposals to generate nation-wide solutions would leverage HIT to start saving lives.

Figure 6. Leverage HIT



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Implications of the Survey

The findings suggest that stakeholders embrace the concept of HIT, and believe it will improve healthcare quality, reduce medical errors, and advance the delivery of appropriate, evidence-based medical care. However, despite the assertion of profitability and improvements in safety and efficiency, adoption rates of HIT are slow. Perhaps, the main deterrent to adopting a nationwide health infrastructure is the lack of foundational data standards.

According to the HHS' Consolidated Health Informatics (CHI) workgroup the time is right to establish universal clinical vocabulary and messaging standards to enable technology development and support exchange in a secure environment. CHI is a government-wide health IT governance council consisting of multiple departments and agencies with health-related missions, including HHS, VA, DOD, Social Security Agency, General Services Administration, and National Institute of Standards and Technology. CHI has developed a portfolio of existing clinical vocabularies and messaging standards enabling Federal agencies to build interoperable federal health data systems. In spring 2003, HHS, DoD and the VA announced the first set of uniform standards for the electronic exchange of clinical health information to be adopted across the Federal government.

CHI will continue to play a pivotal role in the adoption of universal data standards. Leaders in the healthcare industry have communicated how important the Federal government's leadership role is in the adoption of standards. Federal agencies will continue to work through CHI to exchange their ideas and experiences pertinent to standards portfolio as it is assembled. At the same time, private sector consortiums seeking standards solutions are beginning to partner and share their information with CHI. (the President's E-Gov Initiative)

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After the Forum, the breakout summary presentations were reviewed along with the detailed notes from each session, and the priority incentives were identified.

Incentive: Reduce Surveying Frequency

Background	Current government oversight in nursing homes is centered on an annual survey. The process is labor intensive and costly for both the facility and government. The long-term care industry has been advocating for a more outcomes focused survey process in lieu of the survey driven process with the government becoming a true stakeholder in assuring quality. Proactive reduction of the survey burden would be strongly considered.
Description	The government increases the time between surveys of nursing homes and ICFs/MRs[8] for facilities that have no quality of care deficiencies and use electronic health records.
Which stakeholder group benefits from the incentive?	Long-term care facilities and ICFs/MRs
Which stakeholder pays for the incentive?	A key characteristic of this incentive is that it will not cost the government additional funds to implement beyond the initial process modification costs.
Enablers specific to this incentive	The regulation requiring annual surveys would have to be amended or HHS could issue a blanket waiver for every state. The survey process is regulated by the Federal government and implemented by the State government; therefore, some jurisdiction issues may require attention. Lastly, the government needs to differentiate more strongly between quality of care deficiencies and other deficiencies so the safety of citizens is always paramount. A process for random compliance checks needs to be developed and implemented to ensure that facilities actually have EHR and are utilizing them properly.

[8] *ICFs/MR= Intermediate Care Facilities for persons with Mental Retardation*

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Incentive: Provide Financial or Non-Financial Bonuses

Background

The standard payment mechanism for healthcare is to pay a provider or hospital for a legitimate claim of service that is covered by the payer regardless of the clinical outcome. However, a new trend, called "pay-for-performance" seeks to alter the focus of the payment away from process and move it toward outcomes by paying providers a bonus for their patients whose health improves. Information technology facilitates treatment whereby enabling providers to assist their patients in becoming healthy. For example, electronic medical records help providers better coordinate care across the healthcare system or decision support systems can be imbedded to cue providers to apply a new best practice.

Description

Providers would receive bonuses for achieving specific outcomes such as those related to patient health, patient satisfaction, patient safety, provider satisfaction, provider turnover, provider retention, and provider vacancy rates. These bonuses could be financial or non-financial, i.e. input into policies and decision making; participation on committees; CEUs; desired work schedules. The primary aim of this model is to provide providers with financial support for achieving improved patient safety through HIT.

Which stakeholder group benefits from the incentive?

- Providers

Which stakeholder pays for the incentive?

- Centers for Medicare and Medicaid
- Private health plans
- Regional coalition of health plan, employer, and independent community group

Enablers specific to this incentive

Compliance audit should be instituted to ensure outcome-based bonuses to providers.

However, it would need to be determined if the current CMS regulations would allow this or if the regulations would have to be amended. Second, in order for private health plans to participate there would have to be a government mandate as well as strong public support.

Last, it would be essential to have government oversight to help explain what patient safety means in terms of cost reimbursement and how the tolerances and ranges for the outcomes would need to be defined.

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Incentive: Provide Federal Loans and Grants

Background	A common barrier to IT adoption is the high initial investment costs. The Hill-Burton Act (enacted in 1946) was the country's first major health facility construction program originally designed to modernize hospitals, which had become obsolete due to lack of capital investment, and ultimately encourages Federal and local investments in hospitals. Since 1946, more than $4.6 billion in Hill-Burton grant funds and $1.5 billion in loans have aided ~7,000 healthcare facilities.
Description	The Government establishes a Health Information Technology Fund that encourages physicians and hospitals to buy-in to HIT solutions and use a combination of Federal grants and loans with no interest or low interest. This incentive also reduces the cost burden on employers.
Which stakeholder group benefits from the incentive?	• Providers • Hospitals
Which stakeholder pays for the incentive?	Government
Enablers specific to this incentive	Ensure Office of Management Budget (OMB) support. The loan or grant program should be included in the President's annual budget proposal. The government would have to determine which agency would manage the funding and accept the applications for funding. This would probably require some form of statutory or regulatory modification.

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Incentive: Reduce Consumer Out-of-Pocket Costs

Background	Individual out-of-pocket costs have risen 26% between 1995 and 2001.[9] Any strategy to reduce these costs is getting the attention of consumers. For example, organizations have experienced success in modifying individuals' purchasing behavior by tying it to changes in co-pays, deductibles, and premiums. These incentives also increase employee/consumer/patient involvement and knowledge about their own health and healthcare.
Description	Employer and or Health Plan waives/reduces co-pays for employees/ patients that receive care at hospitals meeting high quality standards through HIT improvements. The government could also adopt this model, lowering Medicare beneficiaries' co-insurance payments for those choosing care from physicians utilizing EMR.
Which stakeholder group benefits from the incentive?	• Patient • Employee • Medicare beneficiary
Which stakeholder pays for the incentive?	• Employer • Insurer • CMS
Enablers specific to this incentive	As the consumer of healthcare services, patient involvement is vital. Patients can play a more active role in their treatment process and help in reshaping the policies governing healthcare to improve the delivery, quality and cost associated with the healthcare system. CMS' participation in this model could be ensured through changes in regulations and legislation to reduce co-insurance for beneficiaries.

[9] *Bureau of Labor Statistics (http://www.nchc.org)*

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Incentive: Issue Nationwide Data Standards

Background	Many stakeholder groups cite the paucity of national data standards as a significant reason for slow or unsuccessful HIT adoption among providers. Providers are concerned that the IT solution they purchase may have limited functionality if it is unable to connect with other outside providers who use a system with different standards.
Description	The Federal government should adopt a complete set of data standards to promote an interoperable electronic healthcare system.
Which stakeholder group benefits from the incentive?	• Hospitals • Providers • IT Solutions • Long term care facilities
Which stakeholder pays for the incentive?	Federal government
Enablers specific to this incentive	Sufficient financial resources are essential for this model to succeed and to ensure that current public/private collaborations, such as those occurring in Indianapolis and Santa Barbara, are successful. Prior to congressional action, HHS should gain consensus from these collaborations on which standards to mandate. Congress should pass legislation that will facilitate the adoption of standards to promote interoperability. The Federal government may also consider establishing an advisory commission of experts, similar to the Medicare Payment Advisory Commission (MedPAC), to allow for public feedback and submit reports to Congress on all issues related to HIT adoption. The formation of the HHS' Consolidated Health informatics (CHI) workgroup has made significant progress.

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Incentive: Provide Training for HIT Users

Background	Providers and their staff are concerned about issue of HIT training and support. Once physician offices and hospitals procure HIT solutions, it will be critical that users are trained to ensure proper use and a high level of utilization.
Description	Providers and staff are provided with onsite IT training and classes to ensure workflow and productivity are not compromised, but improved, with HIT utilization.
Which stakeholder group benefits from the incentive?	• Providers and Staff • Hospitals • Long-term living facilities
Which stakeholder pays for the incentive?	There are several possible payers for IT training, the first of which is the Federal government. The government has an interest in ensuring that HIT investments are used to full capacity and used properly to avert patient related errors. Vendors are also a likely source of IT support and training, as they will be providing the software and hardware.
Enablers specific to this incentive	Congress may need to pass legislation calling for a program designed to offer IT support to physicians and hospitals.

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Incentive: Reduce Malpractice Suits

Background	Medical liability costs have been skyrocketing due to increased claim frequency and award severity in the past decade. It has been estimated that medical liability reform could save the healthcare system between $60 billion and $108 billion each year.[10]
Description	Reduction in medical malpractice premiums would be based upon the provider's adoption of HIT. The reduction in provider's liability would likely improve patient outcomes by reducing the number of unnecessary procedures and improving access to therapies and could result in significant savings to the healthcare system.
Which stakeholder group benefits from the incentive?	Physicians
Which stakeholder pays for the incentive?	Insurance Company
Enablers specific to this incentive	Tort reform may be necessary to move forward with this model.

[10] *Department of Health and Human Services, Special Update on Medical Liability Crisis, 9/25/02*

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Incentive: Provide Tax Credits

Background	Alter State/Federal tax structures to encourage investment and adoption of HIT
Description	Providers and hospitals receive State/Federal tax breaks commensurate with their adoption of HIT. This model provides incentives for both rural and small entities to adopt HIT.
Which stakeholder group benefits from the incentive?	• Physicians • Hospitals
Which stakeholder pays for the incentive?	Federal government/Treasury
Enablers specific to this incentive	Congress may consider amending the Internal Revenue Code of 1986 to provide additional tax incentives to encourage nationwide HIT adoption.

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RECOMMENDATIONS

The adoption of Health IT is transforming the way providers, consumers, and payors interact; the role of government in regulating care; and the role of partnerships in the healthcare marketplace. While government regulations and mandates may exert pressure to adopt HIT, incentives provide critical motivation for the nationwide adoption of health information technologies. It is critical that incentives promote adequate implementation, sustained utilization and improved quality of care. The following initiatives should be considered for accelerating our nation's movement towards an interoperable health system that leverages the power of technology.

- HHS should forge partnerships with State and Local governments, regions and the private sector by establishing grants, loan funds and tax credits to support capital investments in HIT adoption. This effort is already underway at the Agency for Healthcare Research and Quality (AHRQ) with the Agency managing $100 million in grants this fiscal year to support the implementation of HIT.

- HHS should guide the execution and implementation of interoperable health IT in its role as the Federal government's principal agent for protecting and preserving the health of all Americans. Since government HIT is not a federal mandate, the Administration should provide adequate fiscal support to HHS in order to ramp-up and increase the FY2006 HIT budget. For example, HHS has already launched the Consolidated Health Informatics (CHI) workgroup, promoting the adoption of interoperable standards for clinical data used within the Federal government. The Department of Defense has also made significant headway by launching the Composite Health Care System II, which stores data from over 100 clinical information systems in a central repository.

- HHS should incorporate IT components into all new safety and quality programs or pilot programs implemented by Centers for Medicare/Medicaid Services (CMS), Office of Personnel Management (OPM), Veteran's Administration, DoD, National Institutes of Health (NIH) and Centers for Disease Control (CDC) that involve direct patient care. For example, the Medicare Modernization Act (MMA), in addition to including HIT provisions, mandated the creation of new programs which CMS will implement over the next few years, including a "Welcome to Medicare" physical for beneficiaries who are eligible for Medicare in 2005. When implementing the new program, CMS should provide incentives to physicians to input the information into an electronic health record.

- HHS should continue to further their relationships with stakeholders. Stakeholder support government HIT standards is a vital catalyst in ensuring national HIT adoption. CHI is a good example of such an initiative.

- HHS should consider initiating a public health campaign to encourage patients to manager their own heathcare. In our current healthcare system, patients are an underutilized resource with the most at stake. Their involvement will lead to better medical outcomes, lower costs and higher patient satisfaction.

- HHS should develop regulations that permit the universal submission of electronic forms and electronic signatures.

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- CMS should make small increases in Medicare and Medicaid provider and health plan payments to accelerate broad adoption of HIT solutions. Concurrently, providers and private health plans should work with other purchasers to ensure adequate buy-in and private-sector investment in HIT that helps everyone.
- CMS should conduct a demonstration project to determine the cost savings associated with EHR or EMR implementation. Such hard data would be useful for government entities such as the Office of Management and Budget, Congressional Budget Office, as well as the private sector.

Next Steps

In addition to these comprehensive and long term recommendations, there are immediate opportunities for progress and impact. HHS' external outreach has inspired action in the private sector. In order to implement an interoperable health IT system, HHS must continue to forge ahead with its internal and inter-agency efforts. To ensure continued progress and success, it is suggested that HHS follow these "Next Steps" for the future.

HHS must re-evaluate the FY2005 budget and begin aggressively planning the FY2006 budget. During the planning period, the Office of the National Health Information Technology Coordinator should work strategically with internal budget planning committees to efficiently shift resources and funds to compensate for all the changes within the government incurred by the implementation of health information technology. Without a government mandate, HHS should devise a budget that can absorb the costs of promoting the implementation of a new interoperable HIT system.

HHS should also identify any initiatives that would require statutory or regulatory change. To develop new policy that addresses these modifications, HHS should assign inter-agency task forces and/or multi-agency task forces to draft new policy before the 2006 fiscal year begins.

HHS should immediately identify and coordinate with the White House on any new initiatives, including incentives, reimbursements, tax credits and mandates, which would require legislative change.

As part of the budget process, HHS should coordinate with DoD and VA to issue internal guidance mandating the inclusion of HIT in the the FY2006 IT budget for every program providing patient care. HHS, DOD, and VA should also identify FY2005 budget neutral changes that would advance the use of HIT within the Federal government.

Having partnered with public and private stakeholders to draft recommendations for the implementation of interoperable HIT systems, HHS should meet with these stakeholders on a periodic basis to review the recommendations. As implementation proceeds, HHS should be responsible for reevaluating and redefining the function and role of the stakeholders. HHS should continue to prioritize the NHII and specifically the CHI to build confidence in stakeholders who are concerned first and foremost about data standards.

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To the public demand for HIT and EHR, HHS should consider launching a public health campaign to inform and educate the public on how HIT can improve public health. This could be an expansive grassroots campaign supported by public service announcements (PSAs), public health information technology forums and web-based educational tools. This type of campaign would directly support Administration's goals about the function of EHR.

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Appendix C

AMGA Health Information Technology Funding

1422 Duke Street Alexandria, VA 22314 (703) 838-0033

HEALTH INFORMATION TECHNOLOGY FUNDING
PROPOSAL

The benefits of health information technology (HIT) are well known. Studies show that use of HIT (e.g., e-prescribing systems, computerized physician order entry, disease registries, electronic medical records, etc.) prevents medical errors, improves communication across care settings (the "hand-off"), and saves money. However, barriers exist that severely hamper the implementation and use of HIT in medical groups, and indeed, in all health care providers. Chief among these barriers may be the high cost to purchase and implement HIT. AMGA's proposal provides a mechanism to allow health care providers to access capital to fund HIT implementation: The Health Care Provider HIT Loan Program.

The Health Care Provider HIT Loan Program (Program) is based on the federal student loan program's Direct Loan program. The student loan program provides the ideal model because of its success, wide-spread popularity and familiarity. This familiarity will allow the Program to easily replicate already proven and successful administrative structures, procedures, and policies. Because the Program is based on the student loan program, implementation should be significantly facilitated.

THE HEALTH CARE PROVIDER HIT LOAN PROGRAM – A SUMMARY

Under the Program, the federal government will use funds from the federal treasury to provide capital to health care providers. The government will own the loans. The loans will be either fixed or low-interest variable rate loans with interest caps that limit the cost to the healthcare provider. The U.S. Department of Health and Human Services (HHS) will subcontract with entities that will originate and service the loans. The Program will be an entitlement program and funding will be provided on a permanent indefinite basis and will not be subject to the congressional appropriations process.

In order to increase the use of HIT, the AMGA proposal calls for the government, in partnership with health care providers and other stakeholders, to explore ways to incentivize HIT implementation. The proposal also calls for statutory and/or regulatory exceptions to federal fraud and abuse laws which are current barriers to HIT, and calls for studies to determine the savings resulting from increased HIT implementation due to Program loans.

ADMINISTRATION

Loans to providers will be provided by the federal government and disbursed through a Loan Origination Center (LOC). HHS will contract with private sector entities to serve as LOCs. This public/private partnership combines private sector efficiencies with public sector commitment to help ensure the Program's success. HHS may contract with one or several entities to serve as LOCs. LOCs will be responsible for assessing the provider's eligibility for a Program loan; obtaining completed promissory notes from the providers; requesting loan funds from HHS;

performing fund management tasks, including monthly account reconciliation; disbursing approved funds to providers, and notifying HHS of those disbursements.

HHS will also contract with entities to serve as Loan Service Centers (LSC). HHS may contract with one or several entities to serve as LSCs. LSCs will be responsible for monitoring provider eligibility status; billing; collecting loan payments; conducting initial collection services on delinquent loans; and transferring defaulted loans to a debt collection system.

HHS will be responsible for reviewing requests for federal loan capital; transferring funds; monitoring loan servicing and collection activities; ensuring compliance with applicable statutes and Program regulations; and monitoring provider default rates.

FEDERAL COSTS

The Program will have minimal, if not positive, effects on the federal budget. The student loan program's main cost components include interest benefits to students under the subsidized Stafford loan program, a special allowance to lenders, administrative costs of contracts to LOCs and LSCs and defaults. Under the Program, HHS will not subsidize Program loans and there is no need for a special allowance. Moreover, recent data shows that government inflows are greater than government costs in the student loan program's Direct Loan program, even when accounting for administrative costs. It is anticipated that over time, the Program will provide savings to the federal budget.

HIT IMPLEMENTATION INCENTIVES

Under Medicare's current reimbursement system, there is little to no return on investment (ROI) for providers to purchase and implement HIT. With some notable exceptions, the vast majority of commercial payers similarly do not provide any ROI for HIT implementation.

CMS, with input from the Agency for Healthcare Research and Quality (AHRQ), health care providers and other stakeholders, will explore mechanisms to incentivize HIT implementation among health care providers. Such incentives may include prompt claims payment, payment differentials, cost differentials, direct payment for services provided through HIT (e.g., CPT code for on-line visits), bonus payments for meeting quality outcomes, etc. Incentives to purchase and implement HIT shall be in place within 18 months of enactment of the Program.

CONGRESSIONAL STUDIES

The government (e.g., GAO, MedPAC, CMS, CBO) shall study the Program to determine the savings to Federal health care programs resulting from implementation of HIT due to Program loan funding.

FRAUD AND ABUSE

Because federal monies will be disbursed to health care providers under the Program, federal fraud and abuse statutes will be implicated, including the Stark II law (Stark law), the Anti-Kickback Statute (AKS), and the False Claims Act (FCA). These statutes currently serve as a barrier to HIT implementation because they prohibit certain financial relationships between health care providers. To encourage HIT implementation, providers must be assured that their

lawful participating in the Program will not result in increased governmental scrutiny and investigation.

To address these concerns, CMS shall create an exception to the Stark law for providers that participate in the Program and adhere to Program rules and regulations. Additionally, the OIG shall create a safe harbor to the AKS for providers that participate in the Program and adhere to Program rules and regulations.

To ensure that the Program is not used as a vehicle to commit fraud, the FCA will be amended, if appropriate, to clarify that false representations to the LOC, LSC, or HHS regarding the Program (e.g., knowing misstatements on the loan application or knowing misuse of loan funds) will be covered conduct under the FCA. Additionally, the Civil Money Penalties Law (CMPL) will be amended, if appropriate, to clarify that fraudulent conduct related to the Program is covered conduct under the CMPL.

REGULATORY MANDATES

The government shall not mandate any additional condition of participation that is not directly related to the application for, and disbursement of, Program loans to eligible providers.

ELIGIBILTIY

To be eligible to participate in the Program, providers must be licensed by an appropriate state agency, participate in the Medicare program, attest that Program loans will be used to purchase, implement, and/or improve HIT, and certify that the HIT is interoperable with a medical group, hospital or health system in the community. Interoperability will help to ensure that providers do not spend federal funds to purchase HIT systems that can not be linked to other community providers.

The provider must not be in default on an existing federal loan. There will be no analysis to determine a provider's financial need because the government will not subsidize Program loans, although the government may, on a case by case basis, opt to defer, forbear, discharge, or forgive the loan based on defined factors.

LOAN LIMITS

The Program loan amount that may be borrowed will be fixed by statute and based upon cost of the HIT and provider size.

INTEREST RATES

The formula used to calculate Program loan interest rates will be fixed by statute and shall stay in effect for the life of the loan. The rate for Program loans will be adjusted annually and will be determined every June 1 to be effective on July 1. (These dates are the same as used in the student loan program and fixing the Program's rate adjustment date on the same schedule will promote efficiency and familiarity). The formula will also establish a statutory maximum rate that can be charged. Interest rate discounts are permissible to provide incentives for on-time repayment, use of electronic fund transfer, etc., provided that the reduction is cost-neutral to the government.

BORROWER FEES
Providers will be responsible for paying origination and, where applicable, loan insurance fees. Currently, the student loan program charges a 3% origination fee to its Direct Loan borrowers.

REPAYMENT TERMS
Providers will be able to choose among payments plans. Under a Standard Plan, providers will pay a fixed monthly amount. Under a Graduated Payment Plan, repayment amounts increase as the provider's income increases over time. Additionally, the Secretary may agree to an Alternative Payment Plan on a case-by-case basis to accommodate a provider's unique situation. There will be no penalty for pre-payment of the loan.

REPAYMENT RELIEF
The Secretary may provide repayment relief to providers including: deferments, forbearance, loan consolidation, and loan discharge and forgiveness.

LOAN DEFAULT
Default will be defined when a health care provider has failed to make a required payment, or otherwise violated the terms of the borrower's promissory note for 180 days. Consequences of default shall include: reports to the major credit bureaus; offset of tax refund due to the provider; wage garnishment; ineligibility for further Program loans (though providers that make re-payment for 6 consecutive months on defaulted loans will retain their eligibility); and litigation.

Mr. PUTNAM. Thank you.

Our next witness is Karen Evans. Karen Evans is the Administrator of the Office of Electronic Government and Information Technology at the Office of Management and Budget. Ms. Evans is a 20-year veteran of the Federal Government, and prior to joining OMB she was Chief Information Officer at the Department of Energy and served as vice chairman of the CIO Council, the principal forum for agency CIOs to develop recommendations. Previously, she served at the Department of Justice as Assistant and Division Director for Information System Management.

Welcome back to the subcommittee, Ms. Evans. You are recognized.

Ms. EVANS. Good afternoon, Mr. Chairman, Ranking Member Clay, and members of the committee. Thank you for inviting me to speak about health informatics and our intergovernmental information sharing efforts.

Until recently, the Federal health information enterprise was neither operating at optimum economy and efficiency, nor able to fully support critical national health and security needs. When handling health data, we seldom spoke the same language. Our ability to respond to national medical emergencies and bioterrorism is hindered when we are not able to share and interpret information quickly and reliably.

To improve our ability to exchange health-related data nationally within and across business functions, the President issued, on April 27, 2004, Executive Order 13335, "Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator." This Executive order supports leadership for the development and the nationwide implementation of an interoperable health information technology infrastructure.

In addition, the administration has launched governmentwide efforts to improve the sharing of health-related data, including the Consolidated Health Informatics e-government initiative and the Federal Health Architecture [FHA], both led by HHS. Together, these activities will improve the quality and the efficiency of healthcare.

Through the CHI initiative, Federal agencies are adopting and using health data standards to facilitate communications and to achieve interoperability. The implementation of these standards will take place as part of the FHA program.

CHI participants include the Departments of Health and Human Services, Defense, and Veterans Affairs, as well as many supporting Federal agencies and interagency councils and committees. CHI interacts with the private sector through the input of the National Committee on Vital and Health Statistics. CHI working groups have identified 24 clinical subject matter domains where data standards should be considered. These domains encompass a significant amount of health-related data. Secretary Thompson announced the adoption of the first five standard domains in March 2003, and the additional 15 standard domains were adopted May 6, 2004.

As standards are being adopted by CHI, the FHA program is creating an architectural foundation by building out the health line of

business within the Federal Enterprise Architecture. FHA has been in existence for over a year and was more formally announced as one of OMB's lines of business task forces in March 2004. The FHA will provide a framework for linking health business processes to technology solutions and standards, and for demonstrating how these solutions will achieve improved health performance outcomes. FHA and CHI have a governance structure well designed to lead activities in a collaborative manner.

In order to achieve intergovernmental cooperation, they work to leverage existing interagency efforts and have developed a clearly defined organizational structure, communication strategy, effective consensus process, and sequential proof of concept demonstrations for individual health business processes. In May 2004, the new Office of the National Coordinator for Health Information Technology was established within HHS. The new office will use the efforts of FHA and CHI to foster agreements, support progress, select health data standards, and ensure uniform and correct implementation of those standards.

Emergency response is one area where Federal performance can be improved by more integrated information exchange. FHA is developing a target architecture for public health surveillance systems to improve interoperability between surveillance systems across multiple agencies and in the national health community. The program is conducting an assessment of existing and planned public health systems to begin the process of identifying opportunities for collaboration and possible cost savings. Because a realtime surveillance capability depends upon the integration of information across agencies, implementation at a national biosurveillance initiative will be coordinated with the Federal Health Architecture effort.

The FHA initiative includes the adoption of governmentwide data standards through CHI and will create the master plan for developing a consistent Federal framework to facilitate communication and collaboration among entities across the healthcare spectrum. This will enable the quick and reliable sharing of information and will improve citizen access to health-related information and services.

This concludes my statement, and I would be happy to take questions at the appropriate time.

[The prepared statement of Ms. Evans follows:]

STATEMENT OF
THE HONORABLE KAREN EVANS
ADMINISTRATOR FOR ELECTRONIC GOVERNMENT AND
INFORMATION TECHNOLOGY
OFFICE OF MANAGEMENT AND BUDGET
BEFORE THE
SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY,
INTERGOVERNMENTAL RELATIONS AND THE CENSUS
U.S. HOUSE OF REPRESENTATIVES
July 14, 2004

Mr. Chairman and Members of the Subcommittee:
Thank you for inviting me to speak with you today to discuss health informatics and successful methods of intergovernmental information sharing and emergency response.

Current State of Health Information Exchange

Until recently, the Federal Health information enterprise was neither operating at optimum economy and efficiency, nor able to fully support critical national health and security needs. In the past, government-wide standards had not been implemented for the exchange of health data among federal departments and agencies; that is, when handling electronic medical records we seldom "speak the same language." For the few existing interoperability partnerships between federal health data users, only a small number of systems were involved, yet these partnerships had proven difficult to implement.

Particularly in Federal interaction outside the federal government, paper-based processes and information exchanges are time-consuming, error-prone and costly, and continue to be the primary way health data and patient medical records are exchanged. Our ability to respond to national medical emergencies and bio-terrorism is hindered when we are not able to share and interpret information quickly and reliably.

To improve our ability to exchange health-related data nationally within and across business functions in an efficient, timely manner, the President issued on April 27, 2004, Executive Order 13335, "Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator." This Executive Order supports leadership for the development and nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of health care.

Additionally, the Administration launched government-wide efforts to improve the automation and sharing of health-related data. In 2001, the Consolidated Health Informatics (CHI) E-Government initiative, led by the Department of Health and Human Services (HHS) began. Its purpose was to improve information sharing through the

adoption and implementation of standards. In 2003, the Federal Health Architecture, also led by HHS, was created to develop a Federal framework for improved information sharing and standards implementation.

Through the Executive Order and these two government-wide efforts, we are working to achieve the following three goals:

1. Adoption of standards to promote interoperability;
2. Development of Federal health architecture, providing a framework for information sharing; and
3. Development of strong partnerships with state and local organizations and industry, through pilot projects and interaction with the National Committee on Vital and Health Statistics (NCVHS).

Establish Standards – Consolidated Health Informatics

A critical step in achieving the President's goal of empowering Americans with electronic health care records within ten years is to enable the exchange of health information. Effective exchange of health care information has already enabled some federal agencies to make significant strides towards improving patient safety, reducing error rates, lowering administrative costs, and strengthening national public health and disaster preparedness. The task now is to extend the exchange of compatible health data across agencies, government-wide. This government-wide interoperability will be based on the adoption of data standards yielding further benefits and providing a model for the health care community to follow in the development of future IT systems.

The Consolidated Health Informatics (CHI) initiative is one of the 24 Presidential e-Government Initiatives. Its goal is to adopt vocabulary and messaging standards to facilitate communication of clinical information across the federal health enterprise. For the first time, the federal health care sector will use the same vocabulary to enable exchange of health information over secure electronic networks. In order to achieve interoperability, CHI standards must be used in information technology systems. CHI was primarily responsible for the adoption of these standards, and the implementation of the standards will take place in the next stages of the project through the Federal Health Architecture Program in HHS.

CHI participants include the three lead partners who deliver health care services: the Departments of Health and Human Services, Defense, and Veterans Affairs, as well as supporting federal agencies who handle health related data, including Social Security Administration, Department of Commerce, and Environmental Protection Agency. An interagency CHI Council directs the initiative, and decisions are made on a consensus basis. In addition, NCVHS serves as the forum for communicating CHI recommendations to, and obtaining feedback from the private sector.

CHI participants identified 24 clinical subject matter domains where standards should be considered. These domains encompass a significant amount of health-related data, including such clinical data content as laboratory results, medications, diagnoses and problem lists, and images. Groups of subject matter experts analyzed candidate standards and drafted recommendations, which were exhaustively reviewed within government and by the NCVHS. Adoption of the first five domains of standards was announced by Secretary Thompson in March 2003, and standards addressing an additional fifteen domains were adopted on May 6, 2004.

CHI's success can be measured in several ways:

1. Agreed to the government-wide adoption and implementation of standards for 20 different data domains, to be incorporated into agencies' health data architectures.
2. Created a model process for government-wide collaboration in the interests of interoperability, using only in-kind resources.
3. Produced comprehensive research on standards, with final work papers available on the OMB website as resources for public use.
4. Reinforced the critical role of industry consensus standards in health care, as well as the need for federal participation in standards developing organizations.

These accomplishments serve as critical building blocks for achieving the President's goals relating to electronic health records. Subsequent activities will focus around facilitating implementation of the standards in federal health information technology projects, working with industry standards organizations to improve the adopted standards, and addressing identified needs for new standards.

The CHI standards form the basis for electronic health data transfer in all activities and projects and among all Federal agencies. Standards adoption must be coupled with transition strategies and processes to refresh standards in order to keep the enterprise-wide health data architecture viable. Adopting and maintaining standards is an ongoing activity requiring the implementation of a robust change management process.

Develop a Federal Health Architecture

As standards are being adopted by CHI, the Federal Health Architecture Program (FHA) is creating an architectural foundation by building out the Health Line of Business within the Federal Enterprise Architecture (FEA), acting as a government wide framework to implement these standards and to enable information sharing. FHA has been in existence for over a year, and was more formally announced as one of OMB's Line of Business Task Forces in March 2004.

The FHA will enable the employment or migration of existing systems to meet citizen-centric business activities while providing clear rules for the development of new tools for improved government performance in the health arena. The FHA will provide the Federal, State, Local and Tribal Governments, as well as health related organizations and

industries with the ability to identify cross functional processes, redundant systems, areas for collaboration, and opportunities to enhance interoperability in their critical information systems and infrastructure. The FHA will also provide a framework for linking health business processes to technology solutions and standards, and for demonstrating how these solutions achieve improved health performance outcomes.

This program will be developed collaboratively with federal partners and key partners throughout the health community. Additionally, it will promote the best practices of the IT industry and leverage the FEA model while overlapping the enterprise architectures of partner departments.

The direct products of the FHA will include the following:

- A framework or roadmap for future health information technology investments;
- Long term partnerships and collaborative solutions across the Health Line of Business within the federal government;
- A robust FHA data repository, serving as a tool for decision-making;
- Identification of needs in areas where data standards do not currently exist, or where consensus has not yet been reached on which standard set to adopt; and
- Suggested transition strategies and plans.

FHA has created a collaborative body of stakeholders to consider and prioritize the health business processes, starting with public health monitoring, offering the greatest opportunities for increased health benefits through a coordinated partnership across the national federal health community. The standards adopted through CHI serve as input for the health vocabulary and messaging standards component of IT architectures. As standards are adopted through the CHI consensus process, agencies are responsible for assuring a health data system architecture aligned with the government-wide FHA as part of the FEA.

FHA has created four primary working groups to address the following areas: Food Safety, Health Services and Electronic Health Records, Interoperability, and Public Health Surveillance. The working groups involving representatives from partner agencies develop target technical standards and business architecture for these areas across the Health Line of Business, as described in the FEA Business Reference Model (BRM). The target standards and business architecture will serve as the channel through which the Federal sector will address interoperability and expanded functionality.

FHA is aligning collaborative health IT investments alignment with Federal priorities and developing joint recommendations for how information systems, supporting technologies and other IT initiatives help fulfill program needs. In May 2004, the new Office of the National Coordinator for Health Information Technology (ONCHIT) was established in HHS. The new office will use the effects of FHA as critical vehicle for ONCHIT to realize its mission by fostering agreement and supporting progress in the government arena for architecture development. It will also use the effects of CHI as a vital force in

establishing and selecting standards, and ensuring uniform and correct implementation by lending their expertise and strong consensus based processes.

Successful Methods for Intergovernmental Information Sharing and Emergency Response

FHA and CHI have been given strong executive sponsorship and have a governance structure well-designed to lead all activities in a collaborative manner. The prescription for intergovernmental cooperation comes from the following principles these initiatives have employed:

1. Establishing clearly defined structure and composition of the collaborative body, which represents all stakeholders, including all relevant federal agencies, and who consults regularly with state and local health communities;
2. Developing and executing a communications strategy for regular dissemination of information and cross-agency interaction;
3. Developing processes which will yield consensus from all members on the critical elements for an effective Federal Health Architecture and adopt standards to guide health information and service solutions;
4. Leveraging existing interagency health collaboration efforts by developing a registry of groups, committees, and organizations working on similar or related initiatives, along with their intentions, goals, and milestones; and
5. Developing a proof-of-concept on individual health business processes sequentially through targeted working groups (e.g. food safety, surveillance).

Emergency response is one particularly important area in which federal performance can be improved by more integrated information exchange. FHA is developing a target architecture for public health surveillance systems to improve interoperability between surveillance systems across multiple agencies and in the national health community. The program is conducting an assessment of existing and planned public health systems and supporting architectures to begin the process of identifying opportunities for synergy, collaboration and possible cost savings. FHA is also developing performance goals for public health surveillance to include at a minimum: improved cycle time for the transmission of public health alerts; reduced data acquisition costs through the elimination of redundant collections; establishment of common items of interest to be collected by all appropriate agencies; and extending opportunities for cost savings through the licensing and maintenance of software at the federal level.

These efforts in public health surveillance will be closely coordinated with the National Biosurveillance Initiative that is proposed in the President's FY '05 budget. The initiative proposes an investment of $274 million at HHS, the Department of Homeland Security, and the U.S. Department of Agriculture to expand and enhance human, animal

and plant surveillance efforts, to expand the BioWatch environmental monitoring program, and to create a surveillance integration group at DHS. Because a "real-time" surveillance capability depends upon the integration of information contained in electronic health records, implementation of the National Biosurveillance Initiative will be coordinated with the FHA public health architecture effort.

In order to promote success in intergovernmental information sharing and emergency response, it is important to develop a process to effectively coordinate the use of the grant and cooperative agreement programs by all agencies to consistently implement the FHA standards throughout the national health community. This process will need to include the national health community, including state and local health agencies. Furthermore, using an iterative approach with each health business process, it is necessary to determine the current state of government health IT architecture and initiatives, and include a strategy for accomplishing the target. It is also necessary to establish agreements among key government agencies to incorporate information interoperability standards for public health into internal business processes, including information technology architecture.

Intergovernmental information sharing will be a catalyst to improved emergency response. Successful emergency response can be delivered using strategies such as establishing a change management process for identifying, evaluating and facilitating the use of emerging technologies appropriate for ensuring continued improvements to the nation's ability to prepare for and respond to public health emergencies. Furthermore, a government-wide effort in biosurveillance, led by the Homeland Security Council is underway. Additionally, through the work of other government-wide E-Gov initiatives, such as Disaster Management and SAFECOM, the Administration, working with state and local governments, organizations, and industry has made improvements in both the development of standards related to interoperability and increased the ability of the public safety community to share information in a more timely and efficient manner. While these initiatives continue their efforts, these specific health-related efforts are able to leverage and build from these accomplishments.

Conclusion

The FHA provided a roadmap for the exchange of Federal governmental health information. The design and evolution of the U.S. highway system provides a useful analogy. The Federal government developed Interstate highways, which connected to state highways, which connected to county roads, etc. The network built upon the existing infrastructure, leveraged partnerships, required strong governance, established well-defined interchanges between components, and evolved over time according to a master plan. The master plan has also evolved to meet the changing needs of citizens. In a similar fashion, the FHA initiative, including the adoption of government-wide data standards, will create the master plan for developing a consistent Federal framework to facilitate communication and collaboration among all health care entities across the health care spectrum to improve citizen access to health related information and services.

Mr. PUTNAM. Thank you very much.

Our next witness is David Powner. Mr. Powner is responsible for a large segment of GAO's information technology work, including systems development and IT investment management reviews. He has over 15 years of public and private information technology-related experience. In the private sector, Mr. Powner held several positions with Quest Communications, including Director of Internal Audits, responsible for information technology and financial audits, and Director of Information Technology, responsible for Quest digital subscriber lines software development efforts.

Mr. Powner has an undergraduate degree from the University of Denver in business administration, and is a graduate of the Senior Executive Fellows Program at Harvard's Kennedy School of Government.

Welcome to the subcommittee. You are recognized for 5 minutes.

Mr. POWNER. Thank you, Mr. Chairman, Ranking Member Clay, members of the subcommittee. We appreciate the opportunity to testify on healthcare information technology. Significant opportunities exist to use IT to improve the delivery of care, reduce administrative costs, and improve our Nation's ability to respond to public health emergencies. This afternoon, I will briefly describe several of the key technologies that, in addition to improving care and reducing costs, can improve our Nation's ability to respond to public health emergencies, including, as the former speaker mentioned, acts of bioterrorism. I will also discuss the importance of implementing standards as new technologies are deployed and how a national strategy can greatly facilitate the implementation of these technologies and associated standards.

Starting with technologies. The 2001 anthrax events confirmed many beliefs that information sharing during a public health emergency has much room for improvement, as participants accumulated dissimilar data and principally exchanged it manually. Information technology can play a critical role in improving this information sharing. For example, surveillance systems can facilitate collection, analysis, and interpretation of disease-related data; communications systems can facilitate the secure and timely delivery of information to responders and decisionmakers; and also electronic medical records have the potential for creating a wealth of data to feed surveillance systems.

Unfortunately, today's public health infrastructure primarily lacks realtime surveillance systems and has fragmented communication networks. Efforts are underway to remedy the situation. For example, CDC is currently implementing its Public Health Information Network, which consists of a number of disease surveillance and communications systems, including the Health Alert Network.

Next, standards associated with new technologies. Last year, when we reported on the identification and implementation of healthcare data and communications standards, we noted that standards development remained incomplete across the healthcare sector. Since then, progress has been made in identifying standards. For example, OMB's Consolidated Health Informatics e-gov initiative has identified a number of standards that are to be applied to new development efforts to promote the interoperability of

information across Federal agencies. However, implementing these standards remains a work in progress. Until these standards are effectively implemented, disparate systems that are incapable of exchanging data will remain. In addition, legacy systems that haven't incorporated the new standards will also remain a problem.

Finally, turning to the importance of a national strategy. To address the challenges of coordinating the many IT initiatives and implementing a consistent set of standards, we recommended last year that HHS develop an IT strategy for public health preparedness and response to include setting priorities for IT initiatives and establishing mechanisms to monitor the implementation of standards throughout the healthcare industry. Subsequently, the President recently issued an Executive order which calls for the establishment of the National IT Coordinator and an issuance of an even broader plan to guide the nationwide implementation of interoperable healthcare systems.

Although it is encouraging that the coordinator plans to issue this strategy next week, this huge undertaking will require continued leadership, clear direction, measurable goals, and mechanisms to monitor progress. Additionally, this strategy will need to be aligned with the Federal Health Architecture, provide incentives for private sector participation, foster intergovernmental and private sector partnering, and stress the importance of robust security measures that ensure patient confidentiality and resist attacks.

In summary, there are many opportunities associated with the implementation of health IT for clinical care delivery and public health. The Federal Government is taking a leadership role in establishing a strategy and identifying standards; however, much work remains, including deploying realtime surveillance and communications systems, implementing the standards that have now been defined, and carrying through on the strategy that is to be announced next week.

We look forward to working with you, Mr. Chairman, and your continued oversight of this issue, which currently includes an ongoing review of Federal biosurveillance initiatives.

This concludes my statement. I would be pleased to respond to any questions you or members of the committee have at this time.

[The prepared statement of Mr. Powner follows:]

United States Government Accountability Office

GAO

Testimony

Before the Committee on Government Reform, Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, House of Representatives

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HEALTH CARE

National Strategy Needed to Accelerate the Implementation of Information Technology

Statement of David A. Powner,
Director, Information Technology Management Issues

GAO-04-947T

GAO
Accountability·Integrity·Reliability
Highlights

Highlights of GAO-04-947T, testimony before the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, Committee on Government Reform, House of Representatives

July 14, 2004

HEALTH CARE

National Strategy Needed to Accelerate the Implementation of Information Technology

Why GAO Did This Study

Health care is an information-intensive industry that remains highly fragmented and inefficient. Hence, the uses of information technology (IT)—in delivering clinical care, performing administrative functions, and supporting the public health infrastructure—have the potential to yield both cost savings and improvements in the care itself.

In 2003, GAO reported on benefits to health care that could result from using IT—both cost savings and measurable improvements in the delivery and quality of care. GAO also reported on federal agencies' existing and planned information systems intended to support our nation's preparedness for and ability to respond to public health emergencies and the status of health care standards setting initiatives.

The subcommittee has asked GAO to summarize our work on reported benefits of the use of IT for health care delivery and on IT initiatives supporting public health preparedness and response.

www.gao.gov/cgi-bin/getrpt?GAO-04-947T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact David A. Powner at 202-512-9286 or pownerd@gao.gov.

What GAO Found

The use of IT can yield benefits in clinical care and associated administrative functions as well as in public health. Health care organizations reported that electronic medical records (EMR) improved the delivery of care because, among other reasons, more complete medical documentation was available to support the provider's diagnosis. In addition, EMRs could greatly facilitate the reporting of public health information associated with the early detection of and response to disease outbreaks. One hospital replaced outpatients' paper medical charts with EMRs, realizing about $8.6 million in annual savings. This hospital also established electronic access to laboratory results and reports, replacing its manual process for handling medical records and saving another $2.8 million a year. In addition, the lessons learned that were reported to us by health care organizations that have successfully implemented solutions could be used by other organizations to accelerate the adoption of health IT. These lessons recognize the importance of reengineering business processes, gaining users' acceptance of IT, providing adequate training, and making systems secure.

Regarding public health, federal agencies identified 72 existing and planned information systems—34 surveillance systems, 18 supporting technologies, 10 communications systems, and 10 detection systems. For example, the Centers for Disease Control and Prevention is currently implementing its Public Health Information Network comprised of a number of disease surveillance and communications systems, including the Health Alert Network. This network is an early warning and response system that is intended to facilitate communication among federal, state, and local agencies during public health emergencies. GAO also reported that identification and implementation of health care data, communications, and security standards—which are necessary to support compatibility and interoperability of agencies' various IT systems—remained incomplete across the health care sector. To address the challenges of coordinating the many IT initiatives and implementing a consistent set of standards, GAO recommended last year that the Secretary of Health and Human Services develop a strategy for public health preparedness and response, to include setting priorities for IT initiatives and establishing mechanisms to monitor the implementation of standards throughout the health care industry. Since that time, progress has been made in identifying standards. The Office of Management and Budget's e-government initiative, the Consolidated Health Informatics initiative, has identified a number of standards to be applied to new federal development efforts and modifications of existing systems. This initiative is intended to promote the interoperability of information systems. However, implementing these standards across the federal government is still a work in progress. Until these standards are implemented, information-sharing challenges will remain. In April of this year, Executive Order 13335 established a National Health IT Coordinator and called for a strategic plan to guide the nationwide implementation of interoperable health IT. As this plan moves forward, it will be essential to have continued leadership, clear direction, measurable goals, and mechanisms to monitor progress.

United States General Accounting Office

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the benefits that effective implementation of information technology (IT) can bring to the health care industry. According to the Institute of Medicine and others, health care is an information-intensive industry that remains highly fragmented and inefficient. Hence, the uses of IT—in delivering clinical care, performing administrative functions, and supporting the public health infrastructure[1]—have the potential to yield both cost savings and improvements in the care itself.

However, effectively implementing IT has historically been a major challenge for this industry. Currently there is inconsistent use of IT in exchanging data and delivering care. In addition, implementing information security measures that resist cyber attacks also remains a challenge.

At your request, today I will summarize our previously issued reports on (1) the reported benefits of using IT for health care delivery, including lessons learned from health care organizations that have implemented IT and (2) IT initiatives that support the public health infrastructure, including the status of standards setting initiatives that are necessary to support greater information sharing.[2] In preparing this testimony, we summarized our prior reports and updated progress on our recommendations in accordance with generally accepted government auditing standards.

[1]The public health infrastructure is the foundation that supports the planning, delivery, and evaluation of public health activities and is comprised of a well-trained workforce, effective program and policy evaluation, sufficient epidemiology and surveillance capability to detect outbreaks and monitor incidence of diseases, appropriate response capacity for public health emergencies, effective laboratories, secure information systems, and advanced communications systems.

[2]U.S. General Accounting Office, *Bioterrorism: Information Technology Strategy Could Strengthen Federal Agencies' Abilities to Respond to Public Health Emergencies*, GAO-03-139 (Washington, D.C.: May 30, 2003) and U.S. General Accounting Office, *Information Technology: Benefits Realized for Selected Health Care Functions*, GAO-04-224 (Washington, D.C.: October 31, 2003).

Results in Brief

As we reported last year, cost savings and other benefits realized by health care organizations that have implemented IT can be significant both in providing clinical health care and in performing the administrative functions associated with health care delivery. For example, using bar code technology and wireless scanners to verify both the identities of patients and their correct medications, a community hospital prevented the administration of over 1,200 wrong drugs or dosages and almost 2,000 early or extra doses. The monetary value of the errors that were prevented was almost $850,000. Another example is a teaching hospital, which replaced paper medical charts with electronic medical records (EMR) for outpatients, realizing about $8.6 million in annual savings.[3] This hospital also established electronic access to laboratory results and reports, replacing its manual process for handling medical records and saving $2.8 million a year. Health care organizations also told us that EMRs improved the delivery of care because, among other reasons, more complete medical documentation was available to support the provider's diagnosis. In addition, these electronic records could greatly facilitate the reporting of public health information associated with the early detection and response to disease outbreaks. Additionally, the lessons learned that were reported to us by health care organizations that have successfully implemented solutions could be used by other organizations to accelerate the adoption of health IT. These lessons recognize the importance of reengineering business processes, gaining users' acceptance of IT, providing adequate training, and making systems secure.

Also last year, we reported that multiple federal agencies had a large number of both existing and planned information systems that are intended to support our nation's preparedness for and ability to

[3]For electronic medical records (EMRs)—also known as electronic health records, automated medical records, and computer-based patient records, among other names—multiple definitions exist, depending on the functions that are included. They can be used simply as a passive tool to store patient information or can include multiple decision support functions, such as individualized patient reminders and prescribing alerts.

respond to public health emergencies, including bioterrorism.[4] Specifically, these agencies identified 72 systems—34 surveillance systems, 18 supporting technologies, 10 communications systems, and 10 detection systems.[5] For example, the Centers for Disease Control and Prevention is currently implementing its Public Health Information Network, which consists of a number of disease surveillance and communication systems, including the Health Alert Network. This network is an early warning and response system that is intended to facilitate better communication among federal, state, and local agencies during public health emergencies. We also reported that identification and implementation of health care data, communications, and security standards—which are necessary to support compatibility and interoperability of agencies' various IT systems—remained incomplete across the health care sector. A major consequence of not implementing such standards is that federal agencies and others associated with public health cannot exchange data. For example, in responding to the anthrax events, one of the major IT challenges that public health officials faced was the issue of how to exchange data among all participants. During this event, participants accumulated dissimilar data and principally exchanged it manually.

To address the challenges of coordinating the many IT initiatives and implementing a consistent set of standards, we recommended last year that the Secretary of Health and Human Services develop a strategy for public health preparedness and response, to include setting priorities for IT initiatives, establishing milestones for defining and implementing all standards, and establishing mechanisms to monitor the implementation of standards throughout

[4]Bioterrorism is the threat or intentional release of biological agents (viruses, bacteria, or their toxins) for the purpose of influencing the conduct of government, or intimidating or coercing a civilian population.

[5]*Surveillance* systems facilitate the performance of ongoing collection, analysis, and interpretation of disease-related data. *Supporting technologies* are tools or systems that provide information for the other categories of systems. *Communications* systems facilitate the secure and timely delivery of information to the relevant responders and decision makers. *Detection* systems consist of devices for the collection and identification of potential biological agents from environmental samples that include an IT component that facilitates the collection of data for surveillance.

the health care industry. Since then, progress has been made in identifying standards. For example, the Office of Management and Budget's Consolidated Health Informatics (CHI) e-government initiative has identified a number of standards that are to be applied to new federal development efforts and modifications of existing systems to promote the interoperability of information across federal agencies. However, implementing these standards across the federal government remains a work in progress. Further progress in leadership has occurred with the President's recently issued Executive Order[6], which calls for the establishment of a National Health Information Technology Coordinator and the issuance of a broader strategic plan to guide the nationwide implementation of interoperable health care information systems. Although it is encouraging that the Coordinator plans to present this strategic plan next week, as health IT initiatives are pursued it will be essential to have continued leadership, clear direction, measurable goals, and mechanisms to monitor progress.

Background

The United States health care system is a large sector of the economy comprised of clinicians, health care delivery organizations, insurers, consumers, and government health agencies. According to the Medicare Payment Advisory Commission, the health care industry generally uses less IT than other industries, and the extent and types of IT deployed vary by setting and institution. The health care industry has recognized that IT can improve the quality of care, promote patient safety, reduce costs of both care and administrative functions, and expedite response to public health emergencies.

Public health officials are increasingly concerned about our exposure and susceptibility to infectious disease and food-borne illness because of global travel, increased volume of food imports,

[6]Executive Order 13335—Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator, April 27, 2004.

and the evolution of antibiotic-resistant pathogens. Public health experts maintain that a strong infrastructure could provide the capacity to prepare for and respond to both acute and chronic threats to the nation's health, whether they are bioterrorism attacks, emerging infections, disparities in health status, or increases in chronic disease and injury rates.

IT can play an essential role in supporting federal, state, local, and tribal governments in public health activities and clinical care delivery. For public health emergencies in particular, the ability to quickly exchange data from provider to public health agency—or from provider to provider—is crucial in detecting and responding to naturally occurring or intentional disease outbreaks. It allows physicians to share individually identifiable information with public health agencies for use in performing public health activities.

The Centers for Disease Control and Prevention (CDC) has previously acknowledged several IT limitations in the public health infrastructure. For example, basic capability for disease surveillance systems to detect and analyze disease outbreaks is lacking for several reasons. First, health care providers have traditionally used paper- or telephone-based systems to report disease outbreaks to approximately 3,000 public health agencies. This is a labor-intensive, burdensome process for local health care providers and public health officials, often resulting in incomplete and untimely data. Second, not all public health agencies have access to the Internet or to secure channels for electronically transmitting sensitive data.

Several types of systems can play vital roles in identifying and responding to public health emergencies, including acts of bioterrorism. These types of systems—described in a technology assessment for the Department of Health and Human Services (HHS) that was completed by the University of California San Francisco-Stanford Evidence-based Practice Center—serve different but related functions and include the following:[7]

[7]University of California San Francisco-Stanford Evidence-based Practice Center, *Bioterrorism Preparedness and Response: Use of Information Technologies and Decision Support Systems* (Stanford, CA: June 2002).

- **Detection**—systems that consist of devices for the collection and identification of potential biological agents from environmental samples, making use of IT to record and send data to a network.

- **Surveillance**—systems that facilitate the performance of ongoing collection, analysis, and interpretation of disease-related data to plan, implement, and evaluate public health actions.

- **Diagnostic and clinical management**—systems with potential utility for enhancing the likelihood that clinicians will consider the possibility of bioterrorism-related illness. These systems are generally designed to assist clinicians in developing a differential diagnosis for a patient who has an unusual clinical presentation.

- **Communications**—systems that facilitate the secure and timely delivery of information to the relevant responders and decision makers so that appropriate action can be taken.

In April of this year, the President issued an Executive Order, which recognizes the importance of IT to the improvement of the health care system to address problems with high costs, medical errors, and administrative inefficiencies. The order establishes the position of a National Health Information Technology Coordinator. This new position has been tasked with providing leadership for the development and nationwide implementation of interoperable health IT in both the public and private health care sectors. The President also announced a goal of having EMRs available for most Americans within the next 10 years.

Information Technology Can Provide Benefits for Delivery of Care

IT can provide significant benefits in providing clinical health care and in the administrative functions associated with health care delivery. Last October, we identified 20 examples of reported cost savings or other benefits at 14 health care organizations that had implemented IT solutions in their clinical care environments. The

rapidly rising costs of health care, along with an increasing concern for the quality of care and the safety of patients, are driving health care organizations to use IT to automate clinical care operations and their associated administrative functions. IT is now being used for, among other things, EMRs, order management, Internet access for patient and provider communications, and automated billing and financial management.

Health care delivery organizations identified instances that resulted in cost savings from the use of IT as a result of reductions in costs associated with medication errors, communication and documentation of clinical care and test results, staffing and paper storage, and processing of information. Specific examples included:

- A teaching hospital reported that it realized about $8.6 million in annual savings by replacing paper medical charts with EMRs for outpatients. It also reported saving over $2.8 million annually by replacing its manual process for handling medical records with electronic access to laboratory results and reports.

- A teaching hospital reported that it saved $5 million annually on drug substitutions, based on automated prompts that recommended alternatives resulting in increased quality and decreased cost.

- A community hospital prevented the administration of over 1,200 wrong drugs or dosages and almost 2,000 early or extra doses by using bar code technology and wireless scanners to verify both the identities of patients and their correct medications. The reported monetary value of the errors prevented was almost $850,000.

- An integrated health care delivery organization reduced the overall number of daily chart pulls, estimating that about $5.7 million in medical record staffing costs were avoided or saved annually.

IT also contributed to other benefits, such as shorter hospital stays, faster communication of test results, improved management of chronic disease, and improved accuracy in capturing charges associated with diagnostic and procedure codes. For example,

- A teaching hospital reported a decrease in average length of stay from 7.3 to 5 days when it implemented an integrated EMR system that resulted in improvements in health care efficiency and practice changes.

- A teaching hospital reported improved patient scheduling using a rules-based electronic scheduling system that accommodated travel time to the appointment, fasting requirements, and providers' availability.

- An integrated health care delivery organization reported improvements in diabetes control for members with the disease, decreases in upper gastrointestinal studies ordered, and increases in the number of Pap smears performed by using alerts and reminders, automated patient care guidelines, and data warehouse reports.

- A teaching hospital reported that 4 percent of radiology orders that had been entered into the order entry system were cancelled and 55 percent were changed when an embedded alert warned that an order was inappropriate for specified clinical reasons.

Health care organizations also told us that EMRs could also improve the delivery of care because, among other reasons, more complete medical documentation was available to support the provider's diagnosis. In addition, EMRs greatly facilitate the reporting of public health information associated with the early detection of and response to disease outbreaks.

The lessons learned that were reported to us by health care organizations that have successfully implemented IT may prove useful for other organizations as they implement solutions—such as recognizing the importance of reengineering business processes, gaining users' acceptance, providing adequate training, and making systems available and secure. For example, organizations reported that business process changes were key in effectively implementing the technology and that users, including physicians, should be involved in systems design and implementation.

Many IT Initiatives Address the Public Health Infrastructure, Although Standards Implementation Challenges Remain

In May 2003, we reported that six federal agencies involved in bioterrorism preparedness and response had a large number of existing and planned information systems associated with supporting a public health emergency. Specifically, these agencies identified 72 information systems and supporting technologies. Of the 72 systems, 34 are surveillance systems, 18 are supporting technologies, 10 are communications systems, and 10 are detection systems. In spite of these many initiatives, the key ones that are intended to facilitate greater information sharing are still being developed and implemented. For example, CDC is currently implementing its Public Health Information Network, which consists of a number of disease surveillance and communications systems, including the Health Alert Network. This network is an early warning and response system intended to provide federal, state, and local agencies with better communications during public health emergencies. The Department of Defense is using its Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENSE) to support early identification of infectious disease outbreaks in the military by comparing analyses of data collected daily with historical trends. We also found that agencies varied in the extent to which they interacted and coordinated with other agencies in planning and operating each of these initiatives.

The October 2001 anthrax attacks and the subsequent emergence of new infectious diseases have highlighted the importance of data standards for real-time data exchange across the public health infrastructure. During the anthrax attack, participants accumulated dissimilar data and principally exchanged it manually.

Since 1993, we have called for federal leadership to expedite the standards development process in order to accelerate the use of EMRs.[8] Most recently, in May 2003, we again reported that the

[8]U.S. General Accounting Office, *Automated Medical Records: Leadership Needed to Expedite Standards Development*, GAO/IMTEC-93-17 (Washington, D.C.: April 30, 1993).

identification and implementation of health care data, communications, and security standards—which are necessary to support the compatibility and interoperability of agencies' various IT systems—remains incomplete across the health care industry. We also identified other standards setting initiatives (e.g., CHI and HIPPA[9]) and raised concerns about coordinating these initiatives.

To address the challenges of coordinating the many IT initiatives and implementing a consistent set of standards, we recommended that the Secretary of Health and Human Services (HHS), in coordination with other key stakeholders, establish a national IT strategy for public health preparedness and response, including specific steps toward improving the nation's ability to use IT in support of the public health infrastructure. Specifically, we recommended, among other things, that the Secretary

- set priorities for information systems, supporting technologies, and other IT initiatives;
- define activities for ensuring that the various standards-setting organizations coordinate their efforts and reach further consensus on the definition and use of standards;
- establish milestones for defining and implementing all standards; and
- create a mechanism—consistent with HIPAA requirements—to monitor the implementation of standards throughout the health care industry.

Since our May 2003 report, HHS has continued its efforts to identify applicable standards throughout the health care industry and across federal health care programs. For example, in May 2004, the CHI

[9]In August 1996, Congress recognized the need for standards to improve the Medicare and Medicaid programs in particular and the efficiency and effectiveness of the health care system in general. It passed the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which calls for the industry to control the distribution and exchange of health care data and begin to adopt electronic data exchange standards to uniformly and securely exchange patient information.

initiative—one of OMB's e-government projects—announced fifteen additional standards that build on the initial five announced in March 2003. Federal agencies are expected to include the standards in their architectures and when they build, acquire, or modify systems. Current plans for the CHI initiative call for it to be incorporated into HHS's Federal Health Architecture by September 2004.[10] This architecture is still evolving, and many issues—such as coordination of the various standards setting efforts and implementation of the standards that have been identified—are still works in progress. Until these standards are more fully implemented, federal agencies and others associated with the public health infrastructure cannot ensure that their systems will be capable of exchanging data with other systems when needed and consequently cannot ensure effective preparation for and response to public health emergencies, including acts of bioterrorism.

In addition, in April of this year, the President issued an Executive Order, which calls for the establishment of a National Health Information Technology Coordinator and the issuance of a broader strategic plan to guide the nationwide implementation of interoperable health care information systems. The coordinator is also specifically tasked with creating incentives for the use of health IT and accelerating the adoption of EMRs, among other things. The Coordinator plans to present the strategic plan next week. Such a plan, if properly crafted, should help to move the health care industry towards interoperable information systems. As health IT initiatives are pursued, it will be essential to have continued leadership, clear direction, measurable goals, and mechanisms to monitor progress.

In summary, there are many opportunities and challenges associated with the implementation of IT for clinical care delivery and public health. The federal government, namely HHS, has taken a leadership role in establishing a strategy and identifying data and

[10]Initiated in July 2003, the Federal Health Architecture is expected to define an overarching framework and methodology for establishing targets and standards for interoperability and communication across the federal health community.

communications standards, which are critical for sharing data across the health care industry—both to improve the quality of patient care in the United States and to strengthen the public health infrastructure. However, much more work remains to more fully utilize IT for the delivery of care and to identify and respond to public health emergencies. HHS needs to provide continued leadership, sustained and focused attention, clear direction, and mechanisms to monitor progress in order to bring about measurable improvements and achieve the President's goals.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions that you or members of the subcommittee may have at this time.

If you should have any questions about this testimony, please contact me at (202) 512-9286 or M. Yvonne Sanchez, Assistant Director, at (202) 512-6274. We can also be reached by e-mail at pownerd@gao.gov and sanchezm@gao.gov, respectively. Other individuals who made key contributions to this testimony include Joanne Fiorino, M. Saad Khan, and Mary Beth McClanahan.

Mr. PUTNAM. Thank you.

And our final witness for the first panel is Dr. Claire Broome. Dr. Broome serves as the Senior Advisor to the Director for Integrated Health Information Systems at the Centers for Disease Control and Prevention. Dr. Broome oversees the development and implementation of CDC's National Electronic Disease Surveillance Program. She is an Assistant Surgeon General in the Commissioned Corps of the U.S. Public Health Service. Dr. Broome graduated magna cum laude from Harvard and received her M.D. from Harvard Medical School. She trained in internal medicine at the University of California-San Francisco and in infectious diseases at Massachusetts General Hospital.

Welcome to the subcommittee. You are recognized for 5 minutes.

Dr. BROOME. Mr. Chairman, members of the committee, thank you for this opportunity to discuss information technology and intergovernmental information sharing to support public health preparedness and emergency response. The Centers for Disease Control and Prevention [CDC] is working closely with Federal, State and local partners to enhance and integrate information systems for public health preparedness. My testimony today will focus on the capabilities that public health must have to support preparedness and our progress in developing the systems to support these functions.

As you know, CDC's mandate is to protect the country against naturally occurring diseases, but also the deliberate use of all biological, chemical or radiologic agents. Obviously, the target in any major health event is to minimize morbidity and mortality by rapid intervention.

Achieving this target requires capabilities for early event detection. I think we all get that. But it also needs the capacity for investigation and effective response. Electronic laboratory result reporting is a new, I would say, 21st century tool which can really help with this, and I will talk a little more about our progress in this area. Finally, communication among key personnel involved in the investigation and response, but also with the public, is an essential part of systems needed.

This is a complicated activity, as you can well imagine, partly because of the large numbers of partners involved. In my public health career I have found myself working with air conditioning engineers, with tampon manufacturers. It is hard to predict what you are going to be dealing with. But we know the core group of local and State organizations, law enforcement, Federal agencies, are all going to be involved.

Information technology presents the opportunity to contribute critically by linking this vast array of partners, as well as by supporting the range of capabilities. CDC's Public Health Information Network, or PHIN, as we affectionately call it, advances national preparedness by building critical interoperability tools. It also does this by certifying that systems built with preparedness funding are actually capable of fulfilling the functions that are needed, and also that they work as part of an interconnected national public health network, as several of the speakers have referred to.

Health data standards are a critical part of that, and we actually have been implementing the Consolidated Health Informatics e-

government standards that Ms. Evans alluded to. Implementing standards are really where the rubber hits the road. We are learning a lot about what is involved in making these standards work so that systems can actually work together.

We are also looking forward to working with the new office, ONCHIT, I guess, or Dr. Brailer's office, as we think the intersection with the clinical sector is critically important for public health success.

All of the partners, of course, have information systems to meet their own internal needs. The challenge is, first of all, to be sure they have that functionality, but, second, to be sure that they can work across the different organizations. We think it is critical that those information exchanges are tested, developed, and regularly used to assure that they will be reliably available during an emergency.

I will now briefly discuss the status of PHIN and hope that I have some opportunity during questioning to go into more detail.

Although CDC received the first funding for PHIN in fiscal year 2004, PHIN integrates and leverages initiatives which have been funded in previous years, so we do have substantial progress to report. In early event detection, the PHIN component is BioSense, which pulls together virtually realtime information from sentinel data sources. This is part of the Presidents 2005 biosurveillance initiative, but right now we have Phase I up and running. This captures sentinel data in 30 cities, covering 32 critical metropolitan areas.

The second area capability that I mentioned was the investigation and response. Here we are working with the surveillance system, NEDSS, with the electronic lab reporting through the Laboratory Response Network and to support through the Outreach Management System, investigation and response capabilities. For example, in Nebraska we have tripled the number of cases that we have heard about and we have taken the time from 26 days down to 1 to 3 days.

Finally, in communications we have a national system, Epi-X, which provides secure communications capacity for 3,500 users across State and local health departments. We also have a Web site with 10.5 million visitors a month where we have targeted information for the media and the public to get information out.

Finally, we have communications channels to distribute health alerts, which have gone to millions of recipients, as well as distance learning, for example, to get information on diagnosing anthrax out to practicing clinicians.

This is just a sampling of the huge range of efforts that are being supported in an attempt to enhance preparedness in this country. I would be very happy to talk further about any of these areas in detail, and appreciate the committee's interest. Thank you.

[The prepared statement of Dr. Broome follows:]

Testimony Before the
House Government Reform Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

On
"Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

July 14, 2004

Statement of
Claire Broome, M.D.
Senior Advisor to the Director for Integrated Health Information Systems
Centers for Disease Control and Prevention
U.S. Department of Health and Human Services

Testimony –
"Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

Mr. Chairman, members of the committee, thank you for this opportunity to discuss the state of information technology and intergovernmental information sharing as it relates to public health preparedness and emergency response. The Centers for Disease Control and Prevention (CDC) is working closely with federal, state, and local partners to enhance and integrate information systems that connect all levels of public health. My testimony will focus on the public health functions that are essential in supporting current and emerging public health preparedness and response needs, and our progress in developing systems to support these functions.

The CDC is mandated to advance national preparedness and response capabilities for naturally occurring diseases and conditions and the deliberate use of all threats, including biological, chemical, and radiological agents. Information technology is now a critical part of this preparedness.

In the event of a major health event, the goal is to minimize morbidity and mortality. Achieving this goal for any particular event involves relying on systems that can provide early event detection, outbreak management, electronic laboratory result reporting, case reporting, countermeasure and response administration, and communications among key personnel and with the public.

The CDC is supporting the need for national public health preparedness, through the Public Health Information Network (PHIN). PHIN is advancing preparedness by identifying the critical need for interoperability and communication between national preparedness information systems. This interoperability is being achieved within the federal government through the development, adoption, and implementation of federal health data standards, as a result of work being done as part of the Presidential E-government Consolidated Health Informatics initiative. CHI and PHIN are working with the National Committee on Vital and Health Statistics and other State and local entities to ensure interoperability nationwide. Adherence to data standards adopted by CHI is required in order for CDC and HRSA PHIN investments to receive supplemental preparedness funding. Through adherence to these data standards, PHIN is now building the components of a real-time national network. This includes the development of critical interoperability tools, and certification that systems built with preparedness funding actually meet the needed functions in a way that supports the broad goal of an interoperable public health network. In order to move PHIN forward to achieve this goal, we are closely coordinating with the newly created Office of the National Coordinator for Health Information Technology (ONCHIT), the Federal Health Architecture (FHA) program management office, the Consolidated Health Informatics initiative working groups, and the Biosurveillance initiative being led by the Homeland Security Council. Each of these entities play an important role in informing public health preparedness needs.

In order to protect the public from major health threat events a variety of organizations need to communicate and inform each other, making public health preparedness a complicated activity. To provide the full spectrum of public health activities, the information and technology at local and state health departments, clinical care facilities, federal agencies , public health labs, and law enforcement need to become more interoperable so that data analysis and information exchange can take place.

All of these organizations are in stages of developing information systems to support their own internal needs. Clinical care is progressing toward electronic medical records, public health and clinical testing labs use laboratory information systems to access specimens and record and manage test results, health departments need systems to identify and manage disease events and trends. Public health preparedness involves ensuring that these organizations have electronic information system capacity and the ability to appropriately share data and information. Public health entities, for example, need to have the capability to receive data from clinical care entities in order to identify unusual disease trends. Clinical care providers need health information from public health related to disease events and suspicious trends to facilitate appropriate prevention and response activities. Health departments need specialized test results from public health labs to confirm or rule out specific diseases and agents. In all circumstances, the information systems and the data and information exchanges between organizations need to be developed, tested and regularly used in order for them to be reliably available during the time of an emergency.

Although the involvement of multiple organizations and organizational functions make public health information technology preparedness a challenging endeavor, substantial progress is being made through PHIN and its component initiatives. The PHIN infrastructure integrates and leverages previously funded initiatives, which have been established to support the overall goal of system interoperability. PHIN received its first funding of $10 million in fiscal year 2004.

The major components of PHIN are outlined below:

Early event detection improves public health preparedness because the earlier an event is identified and understood, the sooner it can be contained and further cases prevented. Recently, the varying international experiences with SARS demonstrated how large a problem can develop when a communicable disease is not responded to quickly and disease spread occurs. Information technology offers great promise for early event detection, by allowing health related data to be analyzed for disease trends without requiring the submission of a traditional case report.

BioSense is a new approach to early detection to improve the Nation's event detection capabilities. It establishes the capacity for rapid, real-time electronic data transmissions to public health agencies from health data sources such as hospitals, laboratories, doctor's offices, and pharmacies to identify early signs of a possible event is one of the objectives of the proposed FY 2005 investments in BioSense and the National Biosurveillance Initiative. The BioSense initiative will support early event detection by complementing astute clinicians in identifying initial events and also supporting public health's needs to

immediately understand the scope of an event and where it is occurring. This information will assist in the further investigation of the event.

BioSense is part of a multi-departmental Biosurveillance initiative included in the President's FY 2005 budget request. Phase I of the BioSense system is now operational and includes data from an initial set of data providers such as DoD and VA. The system has over 220 users in over 30 cities and 32 states nationally.

Case reporting from clinicians and health care related personnel is the traditional way that public health officials have received notice of health events. Under this model, clinicians are required to report certain disease occurrences to their local health departments, who in turn report to the State health department and then to the CDC. Although case reporting frequently depends on clinicians taking the initiative to contact their public health department, this traditional approach remains an important component of public health surveillance because of the critical role that well trained clinicians play in helping to identify and diagnose diseases. For example, a clinician in Florida recognized and reported the first case of anthrax. Electronically enabling case reporting is also critical to national preparedness and emergency response. CDC is continuing to implement the National Electronic Disease Surveillance Systems (NEDSS) – as a component of PHIN in this area. NEDSS promotes a standards-based implementation of electronic case reporting to the state and local levels as well as to the federal level. The initiative includes the use of electronic laboratory result reporting for notifiable disease conditions to improve on the number of cases and how fast cases are reported. As an

example, in Nebraska, NEDSS has reduced the time for disease case reporting from an estimated 30 days to 1-3 days. In addition, NEDSS electronic laboratory reporting tripled the number of cases reported to public health.

Outbreak management involves a series of activities that need to occur at the local, state and federal levels once a disease event has been identified. Information technology is especially useful in managing the information about an event such as the number of possible cases, the identification of possible exposures, and common locations where a disease agent may have been spread. Recently, in both the Monkeypox and SARS events, tracing contacts that people had with other people, animals or locations was critical to managing the spread of the disease. In almost all such events, confirming which cases are "true" cases or differentiating between true threats and hoaxes involves the merging of laboratory test results data with many possible cases or events.

The Outbreak Management System (OMS) provides the functionality to achieve this component of PHIN by linking lab results with epidemiological data. It is designed to facilitate the recording of case investigations, perform contact tracing as well as support data collection, packaging, and shipment of clinical and environmental specimens. Fifteen states are evaluating or have implemented OMS for use in outbreak investigations.

Electronic laboratory reporting provides timely access to and delivery of reliable laboratory test results. Immediate case confirmation and linkage to environmental test

results is frequently necessary to assist in the identification of a threat and the extent of exposure. As there are numerous organizations with their own laboratory systems, this PHIN functional area works to provide standards and specifications to support the timely and secure exchange of electronic laboratory test results across all appropriate organizations and systems that support early event detection, outbreak management, and countermeasure and response administration.

The Laboratory Response Network (LRN) utilizes PHIN standards, specifications, and technology to ensure the reliability, integrity, confidentiality, and the secure delivery of electronic laboratory test results. Over 55,000 Health Level Seven (HL7) standard public health lab results, including those reported from BioWatch environmental air sample collectors, have been received from 18 LRN labs. The Administration's Biosurveillance initiative also includes resources to improve real-time laboratory reporting through the LRN.

Countermeasure and response administration supports the distribution and administration of prophylaxis and vaccinations and supports case isolation to contain and limit the spread of public health threats. Countermeasure administration needs to link to distribution mechanisms such as the Strategic National Stockpile to provide traceability between the distribution of pharmaceutical products and the administration of prophylaxis and vaccination. Countermeasure administration functional capabilities include the ability to track the deployment and success of countermeasure administration and the monitoring of possible adverse events, requiring integration with outbreak

management functional capabilities, inventory and distribution systems, and immunization registries.

The Countermeasure Response Administration System (CRA), formerly the Pre-Event Vaccination System (PVS), is the countermeasure and response administration portion of PHIN. CRA manages information and data through the complete lifecycle of a countermeasure action. Specifically, the system provides a systematic, standard method of data collection, to be used in performing accurate analysis of program preparedness vaccine safety and effectiveness. CRA also provides a secure and reliable means to communicate data following standard specifications.

Communications among key personnel and with the public is critical and essential for all functions that support public health preparedness and response. The public health community must have the ability to share preliminary and sensitive information in a secure environment, as well as to provide information that is ready for public dissemination. Systems supporting the communications component of PHIN include the Epidemic Information Exchange (Epi-X), the CDC website, and other health alerting tools.

The Epidemic Information Exchange (Epi-X) is a fully-deployed public health communications system with a demonstrated track record that keeps frontline public health officials informed of emerging health threats. The system's strongest feature is its ability to rapidly establish and maintain secure channels of communication between key

federal, state, and local health officials. Individual users can be alerted of a developing health threat by pager, landline phone, cell phone, and e-mail within minutes of system activation. Epi-X has a total of 3,500 users consisting of national partner organizations and public health officials at the local, state and federal levels.

The CDC website, www.cdc.gov, provides a vehicle to disseminate publications, information and linkage to public health partners, clinicians, law enforcement, policy makers, the media and the general public. The CDC website averages approximately 10.5 million visits per month.

Other communications tools include the implementation of a nationwide information and communications platform for the rapid dissemination of information on public health threats and emergencies. This communications platform disseminates a broad range of information such as health alerts, educational materials, and updates through a cascading array of communication systems – from federal to state to local to clinicians. This dissemination will be facilitated by the Health Alert Network.

Conclusion

Through several initiatives, the CDC has developed many components for a public health information network that uses national standards to support critical public health preparedness activities with information technology. PHIN is central to these efforts and ensures interoperability and full functional capabilities at all levels of public health.

Through PHIN, the CDC is developing and implementing specifications and requirements for existing and newly developed information systems and health data that are necessary to create a reliable information network capable of supporting the current and emerging needs of public health.

While we have made substantial progress toward enhancing the nation's ability to identify and respond to a public health emergency, much remains to be done. CDC is very grateful for the congressional support received to date and looks forward to working with the members of Congress, especially this committee, as we strive to protect the public's health from terrorism and other public health emergencies.

Thank you very much for your attention. I will be happy to answer any questions you may have.

Mr. PUTNAM. Thank you very much.

Dr. Broome, I would like to talk to you about this past flu season about the difficulty in determining which strain to develop a vaccine for to have stockpiled in time for that year's strain, and that we are overdue to have a super-strain, if you will, something akin to the 1918 strain. How prepared are we for something like that and how will advances in information technology mitigate an outbreak of that magnitude?

Dr. BROOME. Thank you for the question. There are several aspects to that. We do think BioSense and analogous syndromic surveillance is highly likely to provide early warning of an increase in febrile respiratory disease, which is the way that influenza would present So we would get close to realtime warning, and it has been shown with syndromic surveillance that this does go up faster than the traditional flu surveillance mechanisms. So we think that can help us identify that something is happening and also the geographic extent, how many cities is it happening in. However, without turning this hearing into a pandemic flu discussion, I would point out that there are a number of other activities which are critically necessary, such as being able to obtain the actual virus and characterize it and rapidly develop vaccines, which will be necessary to mitigate the impact.

Mr. PUTNAM. Mr. Speaker, you referenced the 1918 strain in your written testimony. Do you want to followup on that?

Mr. GINGRICH. Let me just comment, and Dr. Broome can correct me if I get too much of this wrong. I think if you were to look, 1918 was an unusual event because you had the debilitation of the first World War and you had a population that was probably more vulnerable than you would normally expect. We learned a couple of years ago, with anthrax, that with healthy people, with rapid intervention, with all the things we can do nowadays, we had a lower death rate than we would have expected, I think, theoretically.

But if you had avian flu crossover, for example, which is not impossible, but not likely, but not impossible, and you had the characteristics of the spread of flu, which we actually don't understand; it shows up in places, so you don't have the smallpox quarantine capability. With smallpox you can create circles of defense; with flu we don't understand how it spreads, so it is a lot more difficult problem.

I think one of the things that is not part of this committee's assignment, but one you should carry back, is we really need very basic research in finding a way to manufacture vaccines that is a total break from the current growing in an egg process, because the current process presumes enough foresight that you can catch something in Southeast Asia, and by the time it has circled the planet you are ready for it. And in the age of the jet airplane, if you had a sudden crossover of something, you want to be manufacturing new vaccines to meet the new challenges in days, not in months. We have no technology today that can do that, and in terms of basic research and development into national security, that should be one of the highest values, that should be almost comparable to where nuclear energy was in the late 1940's. Biologicals in the 21st century are what physics were in the 20th century, and we have not yet, at the resource level caught up with

big enough—it is not your topic for today, but I think it fits what Dr. Broome is faced with and what the CDC is faced with with this avian flu and with the patterns of the 1918 flu pandemic.

Mr. PUTNAM. Next week, HHS will unveil their new IT health strategy. Mr. Speaker, recognizing the mechanics of our process in policymaking, what should their initial focus be, given the magnitude of the challenge?

Mr. GINGRICH. I thank you for the question. I actually think there are three parallel areas. The first is to set standards. The work that is already being done, I think you are discovering, once you work it through, it really makes a big difference. And we found, in the Center for Health Transformation workshop about a month ago, that almost everybody who came who was really sophisticated said, look, if you get the standards right, other pieces will start to fall in place. But until, at a national level, you get standards, they are not going to migrate up from subgroups, because subgroups all have their own vested interest, and they have all invented it here and they all want their version. So one is standards.

Second, I can't overstate the importance of forcing CBO and OMB, Congressional Budget Office and Office of Management and Budget, to calculate what we are wasting. Let me give you an example that nobody can quantify today. If you were to try to ask in Medicare or in Tricare or in FEHBP how much are you spending to Xerox records and FedEx them, nobody knows. But because they know what it costs to have an electronic system, they score the electronic system as a cost and they absolutely refuse to score what you would save by not Xeroxing and FedExing. Now, we had Anthony Nolan, who helped develop the English health record, and Ralph Portman, who was on the advisory board to Prime Minister Blair's government, and they both said unequivocally, if you have a Web-based individual health record system, as I said earlier, at $10 a person, it is inconceivable it is not a net savings. And yet I will guarantee you neither CBO nor OMB will score it.

So I would argue the second thing to look at is how do you get governments in America to understand that the information age requires an entrepreneurial public management approach rather than a bureaucratic public administration approach, and then how do you get that kind of change.

The third place I want to come back to is investments. In the private sector, people estimate you should invest somewhere between 4 and 6 percent of your revenue into IT. The IT people tell you it ought to be more like 8 or 10, but I think people would agree 4 to 6. Sutter Health, which is one of the leading hospital systems in the United States, information technology has been putting in about 4 percent a year for the last 7 or 8 years. The Federal Government should insist on a minimum of 1 percent of its own gross spending, which would be, I am guessing—somebody here may have a better number, but my guess is if you combine all Government health spending, you would be at $6 or $7 billion if 1 percent of all health spending by the Federal Government went directly into IT. If you did that, you would, within 3 or 4 years, have us in a different world, and I think you could begin to back off.

I will say one last thing, and I apologize for adding one other thing, but it was a commentary by one of the other panelists.

One of the lessons that the English think they learned is you have to have Web-based overlays and you have to have middleware, because the cost of replacing all of the legacy systems is so massive, and the amount of time and energy to implement it is so huge that you cannot wait until you restructure the entire country. It would be like arguing Henry Ford shouldn't start selling cars until we can replace every single horse and buggy in the country simultaneously. You have to have a method of overlaying Web-based systems and you have to have a method of overlaying middleware systems that translate between legacy systems. And when you do, you design a very different biosurveillance system, because now you can get, at the Federal level, realtime data from every single doctor, not coming up through the State public health system in a 1935 model, but realtime data nationwide through expert systems, and it gives you a much different kind of scanning capability.

Thank you for letting me go on.

Mr. PUTNAM. Does anyone wish to add? Dr. Broome.

Dr. BROOME. Well, just as a point of clarification The BioSense system that I described is actually similar architecture to what Dr. Gingrich was suggesting in that the information comes from existing electronic records directly to the BioSense platform and then is made available at the same time at the Federal, local and State level to authorized secure users. And we think there is real potential to work with existing data sources. Certainly there is a need to assess and define which of those are truly valuable in providing useful information. And there is also a need for public health to be able to followup and investigate whether it is a true alarm or a false alarm. But we agree there are many opportunities that need exploring.

Mr. PUTNAM. Mr. Powner.

Mr. POWNER. If I can just elaborate on the point of implementing the standards effectively. We are well aware and it is well documented that even now that these standards are identified, you have local hospitals that cannot communicate with others even though they are using the same standards. It is really in the implementation of these standards. When you look at Dr. Brailer's strategy and what he needs to focus on, I think one of the key things, if you have a big bang approach, it is going to be very difficult. You probably need to look at regionalized or local success stories with implementing standards, and then you could grow that into some larger initiatives. That likely will be important if we can extend that to a national level.

Mr. PUTNAM. When you say begin with a regional approach or a smaller approach, would you start at the—for example, would your first cut be at the Federal level, where you would do Medicare or Federal employee benefits, VA, or would you let geography take its course and let the State of Florida take the lead or the State of Pennsylvania?

Mr. POWNER. I think either way. But I think if you focus on a smaller scale basis, it is easier to realize some initial success stories, whether it is through some of the Federal programs or on a regional basis associated with the State or a locality.

Mr. PUTNAM. Ms. Evans.

Ms. EVANS. And I would like to, first of all, thank you for having this panel, because I think it is an important topic. The strategy that will be coming out from Dr. Brailer's office will be coordinated with all of these initiatives, taking into consideration several of the things that have already been mentioned by the panel. You know, I am speaking specifically as the IT executive here, and a lot of the points that are being made are exactly what the CIO does as far as recommending the strategy of going forward for the implementation. This is already covered in a lot of things going forward that you do with a modular approach. The CHI initiative, as well as the Federal Health Architecture initiative, are taking into consideration small proofs of concept in order to really drive at the points that are being made by the distinguished panels here so that there is a modular approach. As you do each portion of this implementation, you learn from it so that you can continuously roll those benefits into the implementation and move it forward, versus, as you said, the big bang approach, and then you wait for everything all at once, and if you have made a mistake, then you have a huge mistake and then we haven't moved forward.

So we are looking and we are working with his office on the strategy to ensure that it does address standards, that we continue the work of standards, but that we are looking at how this technology is going to roll out and how those standards will be implemented. As my distinguished colleague said, that is where the rubber hits the road.

Mr. PUTNAM. Mr. Speaker.

Mr. GINGRICH. I would like to agree if by big bang you mean trying to do everything at once. But I would disagree if it meant you were going to create a series of local experiments without connectivity. Let me make a couple quick points.

I have been involved in military transformation actively since 1979. I helped found the Military Reform Caucus; I was the third witness at the initial Goldwater-Nichols testimony on jointness; I am the longest serving teacher in the senior military; and I am on the Defense Policy Board. So I have spent a long time on transformation. If you don't have a clear national systems vision and say, great, we will fund all sorts of local experiments that are seeds, not silos, and the seeds have to have two characteristics that are very different, I believe, from most of the thinking up until now in the system. This is not a Government problem, this is how the culture has evolved. The culture evolved locally and it evolved from institutions. So almost all of the solutions tend to be local solutions and institution solutions. They are both profoundly wrong for this reason: health is essentially—should be centered on the individual. What I care about is my health.

In England, when they started studying this, they discovered that a person with cancer in the national health service could go to 22 different specialists in five different institutions in a 2-year period hand-carrying their records. So you start with the idea anything we do—and I think Dr. Brailer thoroughly understands and agrees with this—anything we do should start with your individual records and how we are going to match data up to you as a human being, and it has an institutional effect and institutional overlay, but it shouldn't be institution-centric or provider-centric.

Second, the reason it is ultimately going to be Web-based is simple: we travel. I mean, consider your own life. Consider the life of a retiree. When the baby-boomers start to retire, they are not going to sit in one place; they are going to be all over the place. So while it is true that 90 or 95 percent of health is actually locally provided—and I just had somebody yesterday from Ford Motor Co. whose father had a heart attack while visiting in Washington, and they had to try to find his doctor in Southern Louisiana on a weekend, and it took Johns Hopkins 24 hours to be sure what they were doing because they couldn't find the patient records. Now, that is all utterly absurd in terms of the technology available.

And so I would hope that, as we design a national architecture, I couldn't agree more, implementation building blocks should be local, specific, measurable, but the core systems architecture should be generally agreed upon, should be universal, and should ultimately have a very big Web-based part and should be individually centered, not provider-centered or institution-centered.

Mr. PUTNAM. Mr. Clay.

Mr. CLAY. I thank the witnesses for their testimony today. I will start with Dr. Broome.

Are we in a position today to quickly detect and respond to major public health emergencies such as SARS and cases of bioterrorism, given the challenges that remain in health IT?

Dr. BROOME. I think it is very important to remember that human beings still matter. There really is no substitute for having clinicians who are informed and aware and having people available at their local or State health departments 24/7. That was certainly the system that worked for the anthrax 2001, and I think it is going to be an important part of activities; it is one of the areas we have been focusing on. At the same time, we think IT is a critical complement to complementing and enhancing that system.

We think that BioSense is a very good first step in providing an automatic scan of sentinel electronic data bases. The President's 2005 initiative for biosurveillance proposes very substantial resources to increase the coverage of that system so that it would be much more encompassing of the private healthcare delivery setting.

Mr. CLAY. Thank you for that answer.

Mr. Powner, since the Federal Government administers the Medicare and Medicaid programs, what lessons can be learned by the entire healthcare industry in terms of improving the quality and efficiency of care provided to the general population? And are we becoming more effective in implementing programs that demonstrate positive results in both public and private healthcare settings?

Mr. POWNER. I think some of the key lessons that can be learned are from Veterans Affairs and DOD, with electronic medical records. They clearly both have initiatives underway to put those in place. Clearly, they are further ahead than other entities, and there is a lot of work going on where they are attempting to have a two-way exchange of those electronic medical records. There are some challenges there, clearly, but there are some lessons learned, too, from those organizations, since they are a bit ahead of others.

Mr. CLAY. Thank you.

Ms. Evans, please give us some examples on how the Consolidated Health Informatics initiative is aiding agencies in their sharing of health-related information. Are the standards recommended being taken to heart by the private sector as well as Government agencies?

Ms. EVANS. Based on going forward with the CHI initiative, as I mentioned in my statement, they have worked very closely together. We do have a consolidated business case which, from an OMB perspective, shows that the agencies are taking this very seriously. There are over 23 partner agencies that are working on this initiative together to define what those domains are, to define what the standards are.

And as I pointed out in my testimony, they have mutually agreed to adopt 20 out of the 24 standard domains going forward. They have also agreed together, without OMB saying this is how it will be, to adopt several of the standards that are available for the healthcare industry, and they continuously work together because they recognize the importance of this initiative.

We, from an OMB perspective, believe that we have now enhanced this and we are trying to help further this initiative so that it can get implemented even faster through the Federal Health Architecture effort, again, through another consolidated business case where they have come together and agreed that this is something that they need to do and work together. The agencies that are listed in there are like EPA—I mean outside of the regular ones that you would think—HHS, DOD, VA. And we watch them very closely and ensure that they are hitting their milestones through the President's management agenda.

So there are several mechanisms that we are using, but the agencies themselves agree that this is truly important and are working together.

Mr. CLAY. Thank you for that response.

Mr. Gingrich, first let me say that it is a pleasure to see you working with both sides of the isle, with friends like Patrick Kennedy, on issues that are so important to the health and economy of our Nation. In the July 13th Washington Post article by C.C. Connolly, you speak of your vision to transform the American healthcare system as a more efficient and technologically adept arena. Could you expand on whether our challenge is more in terms of public resistance to changing the current system they know and live with, or are the challenges more in terms of technology and its limits?

Mr. GINGRICH. Let me say, Congressman Clay, first of all, I am delighted to be here with you, and I would look forward to working with you on a bipartisan basis on these things. And you might notice that in your hometown, the Mercy health system has a remarkable track record in the last 2 years of applying information technology and incentives, and has actually substantially brought down costs in one of their clients by getting people deeply involved in compliance and taking care of their own diabetes and taking care of their own heart disease in ways that has really changed the cost trajectory in St. Louis.

The core of what I think has to happen is to first of all—and this goes right back to the lessons that I learned working with the De-

fense Department in the 1980's and 1990's—you first have to get a clear vision of where we are going, and then you have to start building solutions to fit the vision. We are beginning to see that. Again, Congressman Murphy, as an example of this, on electronic prescribing. It is very clear by any standard that there should not be any paper prescriptions, except in the strangest of circumstance. Routinely, they ought to be electronic; routinely, they ought to be monitored by an expert system to make sure that you don't have a drug problem that we already have something else wrong with you and that drug is not one you should take; to make sure that it is an accurate data so, for example, if the doctor, by accident, puts in the wrong number, an expert system should come back and say that would kill them, as happened to a young girl here in Washington last year, because they misread the prescription.

So I start with the idea that on almost every front—what happened in Britain is interesting. They discovered that you were three times as likely to die of breast cancer in Britain as in France. And that was politically so unacceptable that they had to confront reforming the national health service. And the national service didn't review itself, but the Exchequer, which is their treasury department, brought in a retired banker, not somebody from health, and said look at the system and tell us what is going on; and the banker came back and said if I had the information systems in banking that you have in health, we would go broke in 3 days. And that was the base of their entire effort to create a national system.

So I start with the idea you—and what we talk about the Center for Health Transformation is very straightforward: how do you incentivize people to take care of themselves? And this applies to Medicaid, it applies to Medicare, it applies to private sector plans. If you can incentivize people so they are winning when they are winning, they change their behavior. Second, how do you inform them and give them a chance to inform themselves so they know how to take care of themselves? And, third, how do you take all that data and get it into research capability so whether it is a realtime information going to the Center for Disease Control that says, gee, 39 people this morning got the kind of drug you would give somebody if they had SARS; I wonder if we better check it.

And I couldn't agree more with what Dr. Broome said. I would recommend this subcommittee or the full committee go down the street one building, visit HHS and see what Secretary Thompson has done with his command post, which is literally, I think, the best command post today and the most modern in the world. But then recognize that if you don't have a competent trained professional at the other end of all that technology, it is literally worthless. And so it has to be a total systems approach, not just a single magic bullet approach, and that is harder, it is somewhat more expensive, but in the long-run I think it is going to be dramatically better.

I would also say one other thing where both, I believe, Tricare and Veterans have missed the boat, although I think Veterans are starting back to catch up on it. An individual health record is very different from an electronic medical record. An individual health record is Web-based, relatively simple, can be downloaded over a rural doctor's office on a telephone line. An electronic medical

record is massive, it has every MRI, every lab report, everything ever done to you, and it takes huge bandwidth.

We could have for the entire country an individual electronic health record online for something on the order of $3 billion, and we could sustain it annually for about $1 billion a year. Totally different proposition. An electronic medical record for every American would be, I think, well over $100 billion.

Mr. CLAY. Thank you.

Mr. PUTNAM. Ms. Miller.

Ms. MILLER. Thank you, Mr. Chairman. I appreciate all of the testimony here today, particularly the sweeping vision of what we ought to do with our healthcare system, and certainly what Congress needs to move more expediently toward some of the settings. But unlike my colleague Dr. Murphy here, I am struggling myself with some of these different terms and understanding all of this.

I had an incident in one of my local hospitals just during the break during the 4th where I went to—this is sort of a rural hospital; not completely rural, but very small town. And this was a hospital where the doctors had previously just run around with clipboards, right? They are going into each individual place with their patient with their clipboard. Now they have an electronic notepad. It is sort of in the front of each patient's room; it is on the wall. They can write on it whatever they are doing; they can take it from there and move it into the individual patient's room. So I think one of the biggest problems they are having, though, is getting the doctors to really use these things, because there is a big push back, they don't want to change, if they think it is a nurse's job to use all this technology. And I know that is not a huge thing on the global scheme of things, but it is having a huge impact in this one particular rural hospital, and they were very, very proud of themselves.

And I just wonder if you have some comments about, for instance, in a rural hospital, where they wouldn't have the availability in a big city hospital facility of duplicating all those kinds of things, or having the doctors on staff for all the different kinds of challenges that they might meet. Do you have any comment on what some of these smaller hospitals might be able to do to access information electronically from a larger facility or spread that out where you might have a command post of some type in a rural hospital, where they could take care of half a dozen beds, monitor what is going on there, something along those lines?

I just throw that out there.

Ms. EVANS. I will start from a purely IT perspective, because what you are talking about is a challenge that we face regardless of whether it is at the Federal level or local level. My husband, I will share with you, happens to be a dentist, a healthcare provider. And so trying to automate his office is exactly what you are talking about; it is a change management issue. And so as we are working through these and as we continue to work through these types of projects, that is a very clear issue that needs to be addressed through small modular types of approaches, to be able to try out different types of approaches for implementation to deal with that, and what would be the best way to handle that.

We can't give you necessarily a blanket "this is the way it is going to work," but we would apply what we learn as we continuously roll that out. And you are right, it is going to be different in a rural area than it would be in a large metropolitan area, and that is one thing that we are cognizant of at a Federal level when we are trying to put things together about what that impact would be at a local jurisdiction.

I don't know if my colleague from the CDC has something to say.

Dr. BROOME. I think, as Ms. Evans has indicated, and I think has come up previously, you need to think on several different levels in terms of what kind of solutions you are proposing, and they do need to fit with the technologic capacity as long as you have the big picture vision of where you are trying to get to. In the public health sphere we actually recognize that some of our local health departments didn't even have broadband Internet connections, so one of the preceding initiatives to PHIN was Health Alert Network, which really focused on getting broadband 24/7 Internet connectivity to about 1,000 core local health departments so that they could play. And that is one of the reasons why this is so complex, that you are trying to build infrastructure capacity at the same time that you want to make sure there are applications, there are useful things for people to do with that broadband connectivity; it is not just a point of hooking them up to the Web, it is saying, OK, now we will give you a simple Web screen where you can actually report something that is happening and you can also get alerts, you can find out e.g., that there is an increase of gastrointestinal disease.

So it is a highly complex undertaking, but we recognize the need to think about folks who are in the more rural areas or who don't have the kind of resources.

Mr. GINGRICH. You raise a really good point at a couple of levels. First of all, at a broader level we need to look at the right incentives. If we were prepared to quantify what an electronic record will save in terms of Xeroxing and FedExing, and share half of that savings with the doctor, every doctor in your rural hospital would learn how to change their behavior. I mean, health is one of those places it is a little bit like education; we keep trying to get behavioral change without paying for it, and then we are shocked that people don't change. But why should a doctor go out and have to learn a brand new workflow, a whole new way of doing things, etc., for no compensation? And I think that is a significant part of the problem.

Second, you need to look at large systems that are really working. Visi-Q is a Johns Hopkins spinoff, it is an electronic intensive care unit. Every small hospital in the country should be tied into, whether it is done State-by-State or in some manner, but they should have that kind of quality that is bringing world-class information into local hospitals. The University of Texas medical system, which actually runs the Texas prisons' medical systems, is proof of the concept that you can deliver extraordinary quality of information, you can run emergency rooms on a 24/7 basis with centralized information flow. It is a system worth your looking at.

I just had somebody come by the other day from the American Medical Group Association with a wristwatch that the current gen-

eration is a 250 megabit computer and the next generation is a 2 gigabyte computer, where the doctor could literally walk into a room, plug in the watch, use the keys and the screen—and you are totally HIPPA compliant because it is never going over the Internet. It is half gimmick but half fascination about where the world is going.

Last example of complexity. I think we should be bar coding. We should be bar coding single-dose medication; we should be bar coding medical technology; we should be bar coding hospital supplies. If you are a small hospital and you could get pre-bar coded all that material, you would save a lot of money. One of the interesting problems is that the Federal child safety laws make it impossible to have single dose medication that is too easy to get to for certain things, and so certain things aren't produced in a single dose medication model, because it wouldn't find the tamper-proof system. Very interesting complexities that are in there.

But one of the things you should be looking at from a rural hospital standpoint and a small hospital standpoint is how do we maximize the ease of migrating into the information age so that they are getting the benefit of the cost savings as the system modernizes, rather than having to pay intermediate costs. Today, if you bar code, you have to pay an intermediary to re-bar code most of the medicines into a single-dose packaging for you. That is an extra cost, and small hospitals just won't do it.

Ms. MILLER. That is interesting. Perhaps we need to take the lead on really trying to encourage and incentivize, as you say, in some ways, through HHS or what have you, for the different doctors and that.

I guess my other question would be, we just went through this Medicare reform with the prescription drug benefit now for, I don't know, by anybody's interpolation, how many millions of seniors will advantage themselves of this, hopefully. But is the Federal Government, as we are capturing all of this information, whatever information we are capturing from these seniors, are we doing anything with that electronically? Is there some best practice that we might be able to point to or some idea? I don't know if any of you are familiar with what is happening with that particular bit of information, but you have all of this new information that we are going to be capturing here.

Dr. BROOME. There is a provision in the law which encourages that, and we actually had a discussion at the Health and Human Services Data Council inviting all of the different operating divisions to work with CMS to consider how this could be most advantageously used to provide valuable information for improving healthcare quality and safety. And I am sure they will also engage private sector, probably through the National Committee on Health and Vital Statistics, to participate in that planning.

Ms. MILLER. I see.

Ms. EVANS. Also what is happening in that particular area is that the Social Security Administration is working directly with HHS to deal specifically with what you are talking about, the collection of the information, what is the best way to do that, and to ensure that we do it efficiently and effectively.

It is also probably critical to mention that this, of course, will put a paramount concern on the security of the information and the privacy.

Ms. MILLER. Thank you, Mr. Chairman.

Mr. PUTNAM. Thank you.

Mr. Murphy.

Mr. MURPHY. Thank you, Mr. Chairman.

Since you have seen fit to mention my bill a couple times, I would just like to use this to talk a little bit about it and how this would work. It is H.R. 4805 of the Ensuring Medication Safety for Seniors Act, and it would establish a demonstration program under the Secretary of Health and Human Services and offer grants to Medicare providers to offset the costs of establishing electronic prescribing systems, and set this up in a region where the hospitals, pharmacists, and physicians are connected in realtime so that it increases patient safety by eliminating confusion and errors from handwritten prescriptions, provide realtime access to consultants, allow doctors to view information on alternate medications, dosage levels, drug interactions, generic availability, and improve the quality of care by providing doctors with the information that really is not available in a paper and pen system, and, most importantly, reduce patient risk. We have to keep reminding ourselves that the current death rate is about 20 people a day, I think. It is huge; 19 or so.

Having worked in hospitals for 25 years myself, in hospitals and clinics, I recognize that oftentimes when I would see a patient, that I would be on volume 3 of a chart and each volume would be about two inches thick, and I would be dealing with a baby that was perhaps 2 months old. It was absolutely impossible, impossible to go through there and have any sense of all the detail that was in there; and it was ripe with potential for errors. Now, luckily there were so many people involved in every case, many doctors, nurses, etc., double-checking and triple-checking things, that we minimized the chance for those risks. But the point is when somebody else comes on shift, they should have that information immediately. In today's world, too, if we are looking for another way of cutting costs, and you recognize to sit and try and review these charts in what you may be allowed in your schedule, 5 or 10 minutes to see a consult, where it requires hours of perusing a chart, it contributes massively to the cost of healthcare, and I add that to your savings.

But I would like to mention this, Mr. Speaker. One of the things that has come up is that there is a lack of uniform standards that really prevent us from knowing the full benefits of healthcare IT initiatives. And I know from exploring my bill, that is one of the things that has happened. They talk about somewhere between 6 months and several years before we get to know all these standards. I think the current deadline is several months away.

I wonder if you and other members of the panel can talk about why it is taking so long to develop these minimum standards and what can we do to speed these things up, because that is a huge hurdle we have to face.

Mr. GINGRICH. Let me start with that and then talk about the system you just described for a second.

My conclusion, doing both national security and health, is that it is this hard in part because health is about 30 times more complicated than national security, and it is actually much harder to do. It is much more decentralized; there are many more kinds of professions involved; the rhythm of each of those subcultures is very different. Having done a lot of work on how you transform the Defense Department, that is easy. This is much, much denser and more complicated. So some of it is legitimate.

The second difference is a lot of us who were very big on computers very early—and I started looking at them at Georgia Tech in 1965—we were right about where they would eventually get to, but they weren't there. And I would argue in some ways it is only in the last decade that we are beginning to get to usable realtime capabilities. And a lot of people who were early pioneers burned out and said I don't want to go back and do that again, or they watched their friends do it and they said I don't want to be involved in that mess. So I think you have to understand at one level the experience of some of it.

But let me go through your points for a second. The Mayo Clinic in Jacksonville has been paperless since 1996. One of the advantages is doctors can access the patient record from home or on vacation. So if they want to think about something, they can actually get the data in realtime, at 10 at night, and think about it, which is your point. It is not just staring at the chart now, but you think over the weekend about a particular problem, you would like to have access. That is why online will always beat having a smart card. Ultimately, you want a Web-based system, not a smart card system.

Second, Gold Standard Multimedia is an overlay in Florida on top of a e-prescribing system. The State of Florida got them involved with Medicaid. They are currently, according to the State of Florida, saving $6,000 per Medicaid doctor by three things: realtime reporting of less expensive medicines that are available, stopping medication errors, and detecting fraud; people who went to five doctors the same week to get the same drugs to sell them. Six thousand dollars net per doctor per year is what Florida is now getting out Gold Standard Multimedia.

Evra-Care is a United Health product that takes care of senior citizens. The minute they create an electronic data base about the senior citizens in nursing homes, most of them over 80, many, one-third with Alzheimer's, they almost always reduce the number of drugs they are getting, because once they see the total record, they realize three different doctors have been prescribing, not talking to each other, and, in fact, the person is over-medicated; dramatic reduction in hospital admission.

Last example, though, what I mean about the scoring problem. In Rhode Island in the early 1990's, the estimate was made that every fourth emergency room visit by senior citizens was a medication error. Well, if you went in and said, great, if we could eliminate half of those, how much would we save on emergency room visits? Could we count that against the cost of e-prescribing? The answer would be no. It is always every improvement in health is a plus even if it saves money and saves lives; you never get the advantage of the change. And I would just suggest that is intellec-

tually wrong, and it is a major inhibition to adopting new, better systems.

Mr. MURPHY. I would just like to move to pass my bill tonight, if we could do that.

Mr. PUTNAM. I think you would find widespread support in the subcommittee, but I am not sure we have enough juice.

Ms. Evans, there are several different paths being pursued, the working groups in food safety, health services and electronic health records, interoperability, and public health surveillance, all under the FHA. They will develop target technical standards and a business architecture for the health line of business. Could you give us a status report on each of these, please?

Ms. EVANS. We are currently working forward on that, and we have consolidated it into what we are now calling the line of business. So they have specific targets that they are working on. I do not have the specific deliverable dates under each of those, I would be glad to go back and look at that. They are working on the plans for what they are going to be requesting for their path forward in fiscal year 2006. We are working on that consolidated business case right now for all the agencies.

We do continue to work on the CHI initiative as well, and there is going to be a second phase of that to address the additional domains that have not been agreed upon yet. Both of these will roll up together and will be reflected in the strategy that is coming forward from HHS dealing with this overall. So there will be a general timeline in that as well, when that strategy is released.

Mr. PUTNAM. If you could get those dates for us. I think that is an important piece of what we are after.

Ms. EVANS. Sure.

[The information referred to follows:]

HEALTH LINE OF BUSINESS
FHA WORKING GROUP HIGH LEVEL DELIVERABLES

Summary: Below is a general timeline for the deliverables expected from Federal Health Architechture working groups in the Health Line of Business. The four main deliverables for each working group are: a baseline inventory, a target architechtire, performance measures, and a transition approach. The deliverables are listed across the top of this table, with the expected quarter for delivery in the row that corresponds to each working group. A separate timeline for CHI is not provided, since they are now a part of FHA, and operating within the Interoperability working group. This working group is currently developing a strategy for moving into Phase II, to address domains that either were not considered in Phase I, or did not recieve recommendation during Phase I.

	Baseline Inventory	Target Architecture	Performance Measures	Transition Approach
Health Care Services-EHR	FY05Q1 Presentations by DOD, VHA, CMS, DOS, NIH, HIS	FY05Q3 Business Architecture	FY05Q1	FY05Q2 Preliminary approach, to be refined when target completed
Food Safety	FY05Q2 Presentations by FDA, FSIS, APHIS, DOD and others TBD (Customs)	FY05Q3 Business Architecture	FY05Q2	FY05Q3
Interoperability	FY05Q1 Presentations by CDC, VA, EPA, and others TBD (DOD)	FY05Q2 Technical Architecture	FY05Q2	FY05Q2
Public Health Surveillance	FY05Q2	FY05Q3 Business Architecture	FY05Q3	FY05Q3

NOTES:

Now that the National Coordinator for Health IT's Framework for Strategic Action has been published, the working groups are revisiting these plans as needed to support the overall tactical plan for National Health IT.

The approches and timelines of the various groups are in part driven by the maturity of the architectures and business process definitions of the partnering departments.The EHR work group's approach is to document a collection of processes which are inherently interelated and compirse the EHR. Conversely the Food Safety has choosen to focus on the Import process which represents an aspect of Food Safety and will require an iterative re visiting of additional processes.

Mr. PUTNAM. Mr. Powner, you cited the VA as being one of the leading innovators using information technology to bring greater efficiency to healthcare. Have you done any of the work on the Bay Pines computer pilot project fiasco?

Mr. POWNER. I have not, Mr. Chairman.

Mr. PUTNAM. OK. Then I won't ask you any questions about it.

And, Mr. Speaker, we have referred a great deal to the U.K. model of healthcare delivery, but your comments, your references to it were new to me, so I would like you to take an opportunity, please, to describe where they were, where they are going, and how they made their transformation, understanding that they face the same friction that we would face here, on perhaps a smaller scale, but, nevertheless, the same issues.

Mr. GINGRICH. Well, it is a national health service, and they have certain advantages because they actually employ most of the doctors. They, for a very long time, have had a fair amount of information electronically available inside any particular facility, but not available nationally. And I think they are going to have a lot of teething pains; it goes back a little bit to why the big bang can be more exciting than you want it to be.

But what they designed was five regional systems networked together by what they call a national spine. The national spine would really contain the individual health record; the regional systems would contain the medical records. And the health record is built up by simply copying automatically out of the electronic medical records. So you would end up with everybody in England—it is in England, not Scotland, Whales, and Northern Ireland. But in England you have about 55 million individual health records. They are beginning to launch them this summer. They are having teething pains, but the theoretical model that they are working off of is of three very different things. First, this is an excuse to replace the legacy systems and they are going to spend a fair amount of money, about 6 billion pounds plus, over the next 5 years, which would translate roughly into about $10 billion. And this population is slightly larger than California, to give you a sense of scale for an American model. And there they are going to try to actually replace the legacy systems. We have talked, for example, with IDX, which is very deeply involved—and IBM are very deeply involved with the biggest hospital system in London, trying to replace their entire legacy system.

Second, they have the regional centers that are being set up and run by a variety of companies. There were five different bids. And companies like Excenture of Hujitsu won those bids, BT, formerly British Telecom. And then BT, or British Telecom, as they used to be, won the national spine, which is putting together this data so that wherever you go in England you will have access to this. And it will be on the Web, so literally wherever you went in the world, if you get access back into the system, you can get it. That piece is, I think, the most revolutionary because it is individually centered, Web-based, it is secure, and it allows the information to follow you everywhere.

I suspect sometime this summer we will start to see it actually happening. But I would think of it as three different projects with three different cost centers. The least expensive, ironically, is the

individual health record for the whole country. The most expensive is replacing the legacy systems, which is going to be very expensive. And as several people have alluded to, once you get involved in the workflow problems and all the different things that happen at that level, it is a big challenge.

Mr. PUTNAM. Thank you very much.

Ms. Miller, do you have any additional questions for the panel?

Ms. MILLER. I don't, Mr. Chairman. Thank you.

Mr. PUTNAM. Well, in that case, I want to give each of you the opportunity to rebut or add to anything that any of your fellow panelists have said, answer the question that you wish you had been asked, or give any parting comments, beginning with Dr. Broome.

Dr. BROOME. This has been a wonderful opportunity, I think, to talk about some issues that are really critically important for the country. I think it is helpful to get down to the fairly practical areas of what are going to be the payoffs for this, and so we are really trying to implement the Public Health Information Network in a way which lets us document payoffs for the health system. And the one area that I would like to just say a few more words about is the area of electronic laboratory reporting, because I think that demonstrates the kind of payoffs that we are already seeing. It also shows standards in practice. This employs the CHI standards for messaging specifications and for what we call controlled vocabulary, SNOMED and LOINC, and it lets a clinical laboratory trigger an automatic notification to public health that a condition of public health importance has occurred. So that is helpful to us. As I think I mentioned, we actually tripled the number of cases we heard about from one single laboratory. Using this kind of automatic notification doesn't require the lab to think, oh, I have to notify public health.

More to the point, the same standards could be used to notify the FDA about an adverse event related to a vaccine or drug. They could be used to notify the FDA, USDA, CDC about food safety laboratory results. They could be used to notify the EPA about safe water results. So I think you can sort of see the options; you can either go the route of sort of chaos and putting a burden on laboratories to communicate, or you really can expedite and solve a lot of problems by doing this right.

Mr. PUTNAM. Mr. Powner.

Mr. POWNER. Two points, Mr. Chairman. One, a lot of the initiatives associated with PHIN that Dr. Broome mentioned are steps in the right direction, but clearly where we need to go with that is nationwide implementation and full functionality. We talk about different phases and when additional phases are going to come on board. It is very important that these things get deployed with full functionality and on a nationwide basis. We have a good start, but I think we need to keep the momentum and we need to continue to drive that progress with solid milestones and accountability over those systems. Realtime surveillance and communication will be extremely important as we respond to public health emergencies down the road.

Second point is implementation of standards. There is a good discussion going on here about what we need to do with implementing

standards. That is very difficult. And the scale that we are discussing right here is just a huge, huge challenge; and hopefully Dr. Brailer's strategy will lay out some milestones and steps that we can take in moving that in the right direction.

Mr. PUTNAM. Ms. Evans.

Ms. EVANS. As always, sir, I would like to thank you again for highlighting the e-government initiative in this area that is so important to this administration, but also giving the opportunity to talk about other initiatives and showing how they all come together here, for example, the President's initiative on broadband, which would address the rural issues that we were talking about being able to establish that connectivity; the Executive order on health, as well as our initiative going forward on biosurveillance. But I think all of these really show the President's commitment to a citizen-centered government using e-government as his tool, using information technology to be able to bring those services to the citizen.

So I thank you, and I thank you for the opportunity to appear with my esteemed colleagues today.

Mr. PUTNAM. Thank you.

Mr. GINGRICH. Thank you very, very much for having this panel and for asking these questions, and for allowing particularly my colleagues on the panel who have worked for the U.S. Government and done so much to try to bring their professional capabilities and their integrity to this.

As a historian politician, if I could close this out, I would say if you go back to your colleagues and tell them that the biggest problem is that we don't have a threat of urgency. If I had a single slogan, it would be "we have been warned." People, right after September 11, said why weren't we ready. From 1347 to 1349 the Black Death killed a third of the people of England. In 1918, more people died from the flu than died in the entire first World War in 4 years. And we recently watched SARS briefly emerge and then, fortunately for us, disappear. The Center for Disease Control watches the avian flu every day and is desperately hoping that it doesn't cross over and become a human susceptible system.

I think there are three simple questions that the Congress has to ask itself: What is the value of life? If it is a car wreck, we will get a helicopter to take you to the emergency room. If it is a heart attack, we will get the ambulance to show up. So what is the value? Because we could be in a situation where we could lose a million people, and we are not making the kind of investing saving a million lives would be worth.

Second: How real is the risk? You could bring in a panel of Nobel winning biologists and ask them that question, and if it is a closed hearing, what they will tell you would be really, really sobering, because it probably won't happen; but if it did happen tomorrow, we really couldn't stop it. We can stop smallpox. Smallpox is not the problem. It is painful, it is difficult, it is dangerous, but in the end you can quarantine smallpox. That is how we beat it last time. But you get something like the flu that spreads the way the flu does, we are in big trouble.

Last: How vital is health information technology to the safety of our Nation? I think it is absolutely central. I regard a biological

threat as a greater threat than a nuclear threat. And I think that what these folks are doing and what the agencies they represent are doing is as central to our survival as the strategic air command was in the cold war.

And I really thank you very much for taking the time to hold this hearing, and I hope that you will share with your colleagues how really serious this is. Thank you very much.

Mr. PUTNAM. Thank you, Mr. Speaker. And thank all of you very much for your outstanding contributions to this hearing, and for this sobering and somber assessment of where we are, but certainly giving us a path toward progress.

With that, the subcommittee will stand in recess while we reshuffle the cards for the second panel.

Thank you again for your assistance.

[Recess.]

Mr. PUTNAM. The subcommittee will reconvene. I want to thank our second panel for their patience. I know we are running a little bit behind. And I want to thank the diehards in the audience for sticking around, even though the rock stars have gone.

At this point I would like to swear in the second panel. Please rise and raise your right hands.

[Witnesses sworn.]

Mr. PUTNAM. Note for the record that all the witnesses responded in the affirmative. We will move immediately into testimony.

Our first witness is Dr. Seth Foldy. Is that correct?

Dr. FOLDY. That is right.

Mr. PUTNAM. Dr. Foldy recently ended a 6-year term as commissioner of health in Milwaukee, WI, where his innovations in disease surveillance, electronic communications, and multi-jurisdictional and public/private collaborations earned him the American Public Health Association's Roemer Prize for creative local public health work and other awards. Dr. Foldy also chaired the Information Technology Committee for the National Association of County and City Health Officials, and served on the Foundation for e-Health Initiative Board, the CDC's Information Council, and other groups devoted to public health information infrastructure. A board certified family physician, Dr. Foldy is associate clinical professor of family and community medicine and health policy at the Medical College of Wisconsin, and offers consultation on population health strategy, health informatics, and health policy.

Welcome to the subcommittee. You are recognized for 5 minutes.

STATEMENTS OF DR. SETH FOLDY, M.D., FORMER CHAIR, INFORMATION TECHNOLOGY COMMITTEE, NATIONAL ASSOCIATION OF COUNTY AND CITY HEALTH OFFICIALS [NACCHO], FORMER HEALTH COMMISSIONER, CITY OF MILWAUKEE, ASSOCIATE CLINICAL PROFESSOR, FAMILY AND COMMUNITY MEDICINE, MEDICAL COLLEGE OF WISCONSIN; RICHARD S. WEISMAN, COORDINATOR, WEAPONS OF MASS DESTRUCTION RESPONSE PROGRAM, JACKSON MEMORIAL MEDICAL CENTER, DIRECTOR, FLORIDA POISON INFORMATION CENTER/MIAMI, RESEARCH ASSOCIATE PROFESSOR, PEDIATRICS, UM/JACKSON MEMORIAL HOSPITAL; AND GORDON AOYAGI, FIRE ADMINISTRATOR, MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

Dr. FOLDY. Thank you very much. Thank you, Chairman Putnam, members of the committee, and all of my colleagues here for seeking the input of the Nation's 3,000 local health departments who play a critical role in the Nation's health protection. To my qualifications I would add I was also a family physician who was among those who, about 20 percent of the patients I saw, I did not have medical records on to make decisions. Many of the admissions that I made were due to lack of information.

Although we are talking about very complex issues today, it boils down to the most critical issue, which is making sure that the clinician or the public health official have the information in front of them that they need when they need it to make a critical decision.

My rather unlikely involvement with health informatics came from moving to Milwaukee in the aftermath of two serious events there, the first in 1993, where a waterborne outbreak sickened more than 400,000 people at the same time with a severe diarrheal illness that killed more than 100. This was an illness that went unnoticed by the public health system for as many as 7 to 8 days after the increase in illness had begun, and an even longer period after environmental cues could have triggered public health awareness and response. The year before I arrived, the severe heat wave in 1995 was brought to public health attention not by hospitals, not by clients, but by the morgue and by the coroner's office.

So my goal as health commissioner in the city of Milwaukee was to greatly shorten by any means necessary the period between an event and the earliest possible opportunity to engage in public health action, which obviously was sub-optimal at that time. We have gone a long ways. My staff has finally developed their diarrhea meter that can show me simultaneously the number of EMS runs, hospital visits, nursing home illness, laboratory requests that all relate to diarrheal disease. We have similar monitors for respiratory disease.

Last year was a banner year for us in many years. First, looking at the top-down model, when CDC asked the healthcare community to start surveilling for SARS, within 72 hours we had all the emergency rooms in the community using a standardized screening form that alerted them to possible SARS in the community. They were also able to electronically report to us once a day, the volumes of SARS-like symptoms that they saw. Because of the Internet and interlocking health applications that were in use in more than two dozen cities across the country, three other cities adopted the same

system, this was a local-to-local cooperative effort, and were able to initiate SARS surveillance near realtime in our communities.

On the other hand, from the bottom-up perspective, when we found one individual who had kind of a strange illness and had been in contact with a sick prairie dog, this was the second case, this was the case that tipped the balance, that caused us to begin investigating what ended up being the hemisphere's first outbreak of monkeypox, a virus that, if I studied it in medical school, I surely forgot about. We had one opportunity to make sure that this virus did not become established in the domestic and wild animals of our community, so our cats were not bringing it in into our homes on a regular basis. Local public health and the city of Milwaukee had to manage 30 patients on an urgent basis, 90 contacts, hundreds of animals in a data nightmare. Our goal, of course, was to isolate, to quarantine, to act, to contain. It was done successfully. This outbreak ended up involving 11 States and overseas, but it certainly gave rise to our understanding that we really need to share health information rather than just push it around.

This raises two important points: one, NACCHO fully endorses the President's vision of a rapid ascension to electronic medical records and national health informatics infrastructure. We strongly support the efforts at HHS of Dr. Brailer; two, you cannot underestimate the importance of this project to local public health, and I need to warn you that local public health is not in a great position to fully avail themselves of the benefit of this new opportunity.

Dr. Gingrich raised the example of "what if CDC, through its automated data gathering systems, learned about 39 SARS-like patients?" Then it becomes incumbent on the local health officer, wherever that outbreak may be occurring, to identify those patients, not just to know that they are there, but to interview them, to quarantine them, to identify their contacts, to send laboratory tests, to bill for those laboratory tests, to quarantine contacts; a very huge labor-intensive process of work. What you need to understand is that the local health departments of this country are the eyes and ears and hands and feet of public health, not the Centers for Disease Control. CDC is critical, very important, but the actual success of our outcome will not be because CDC knows something is going on, but because the local public health foot soldier on the ground has the capacity to respond immediately, confidently, with excellent health information.

That leads me to our recommendations. I will make one point. The point was made by Dr. Broome that Federal funding had gone far to bring what had once been fewer than half of the Nation's local health officials online with rapid Internet access and email. That was because Congress mandated that bioterrorism funds go to that purpose, that 85 percent of a particular fund line go to local public health infrastructure to make sure that they can participate in the electronic revolution in health. We think that kind of effort needs to continue. Unfortunately, the 2005 request of the President, has actually taken money from local and State preparedness to spend on the BioSense initiative. The BioSense initiative is a great experiment in syndromic surveillance, but we can't be robbing the local Peter to pay the national Paul, because when it

comes to actually doing the work of fighting an outbreak, in the end we will lose.

My written testimony includes seven very specific recommendations: To make sure that we have real access to real health information. The first and perhaps most important of these, is the measure we use to know if this system is really going to make a difference. That measure needs to be that the local partners on the ground demonstrate that they can exchange information electronically. If that measure is not established at the national level, tracked at the national level, then we could be building castles in the sky and leaving the local partners out of the loop; and I suggest strongly that the Federal policy not make that mistake.

Thank you.

[The prepared statement of Dr. Foldy follows:]

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NATIONAL
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Statement of

Seth L. Foldy, MD

on behalf of the

National Association of County and City Health Officials

Before the

Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

House Committee on Government Reform

Hearing on "Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

July 14, 2004

Thank you, Chairman Putnam, distinguished Subcommittee members, and my colleagues in the room today for your interest in intergovernmental information sharing and emergency public health. I particularly thank you for seeking the perspective of the nation's 3000 local public health departments represented by the National Association of County and City Health Officials, on whose behalf I testify today.

For the past four years I chaired NACCHO's Information Technology Committee. In May I ended a six year term as Commissioner of Health of the City of Milwaukee. I have had the opportunity to represent the perspective of local public health regarding the nation's health information infrastructure at the Centers for Disease Control and Prevention, the eHealth Initiative, the Connecting for Health project of the Markle Foundation, the Rand Institute Summit on Information Technology Infrastructure for Bioterrorism and other planning groups. Previously, I practiced and taught family medicine.

You have sought testimony on a complicated tangle of issues that actually boil down to one critical question: How can both health care providers, and public health and safety officials get the information they need when, and where, they must make a decision? The health care provider makes decisions regarding an individual patient or family; the public health official about an entire community. In the setting of a communicable disease, a covert bioterrorism attack, or an environmental emergency, poorly informed decisions by either party result in missed opportunities to prevent injury or illness, sometimes on a massive scale.

For instance, if a doctor or laboratory fails to inform public health officials of a notable finding, no action to protect the community will occur. If public health officials do not alert clinicians about local cases of Sudden Acute Respiratory Syndrome (SARS), anthrax, or whooping cough, cases will go unrecognized and transmission throughout the community will continue. If the cycle of communications fails at the local level, state and federal officials aren't notified, and the nation remains at risk.

Improving the timeliness, completeness and accuracy of information exchange in both directions is a critical goal for improving the nation's preparedness for bioterrorism, for natural disease outbreaks, and for other emergencies. One good example such of effective information exchange is automated electronic reporting of laboratory results to local health authorities.

Milwaukee is particularly sensitive to the importance of receiving timely information and acting upon it promptly. In 1993 a little-known waterborne parasite (*Cryptosporidium parvum*) caused over 400,000 illnesses and about 100 deaths. The traditional systems of disease surveillance based on legally-mandated reporting of confirmed diagnoses failed to provide notice to health officials until much of the damage had already been done. Had public health authorities known earlier about changes in water quality measurements, surging absenteeism at workplaces and schools, and the rush for stool

examinations and for over-the-counter anti-diarrhea medications, preventive response could have begun sooner. Similarly, Midwestern public health agencies were slow to learn of rising illness from heat deaths during the severe 1995 heat wave until morgues were full. No information: no action. No action: no protection.

Our capacities were improved by 2003. In March, 2003, within three days of CDC's nationwide request for SARS surveillance, we sent SARS screening forms to local physicians and 11 emergency rooms voluntarily began transmitting daily counts of SARS-related symptoms to our health department. Then in June, a single telephone call initiated an investigation that helped alert CDC to the Western Hemisphere's first outbreak of monkeypox. Rapid, but complex management of over 30 human cases, 90 human contacts and hundreds of animal contacts in Southeastern Wisconsin helped prevent the virus from becoming permanently established in North American animal hosts. A magnificent effort by local, state and federal public health and agricultural professionals was nonetheless hampered by the inability to share information between our various databases, requiring a constant stream of telephone calls, faxes and emails in a nearly futile effort to keep everyone on the same page.

These examples are given to drive home two points. The first point, I believe, echoes all who will testify today: we must do everything possible to speed the transition of health-related records from paper to secure electronic files, employing interoperable data and transmission standards so information can automatically and rapidly reach those authorized to see it (including public health officials). Toward this end NACCHO endorses the President's 10-year technology plan to a) promote health information standards; b) fund demonstration projects; c) provide incentives and remove barriers to the adoption of electronic health records and the exchange of health information; and d) create high-level medical informatics leadership in the Department of Health and Human Services with authority to drive strategic development of a national health information infrastructure (NHII) across multiple departments (including Defense, Homeland Security, Environmental Protection Agency, and Veteran's Affairs).

The second point is that the nation's local public health departments must be active participants in this new health information infrastructure. They are effectively the eyes, ears, hands and feet of the nation's public health system. The nation's public health preparedness will suffer if local public health agencies are left on the wrong side of the digital divide.

Local health departments perform the vast majority of data management or data-dependent tasks related to communicable disease control and environmental health. These include: interviewing cases and contacts; vaccinating; imposing isolation, quarantine, and environmental orders; certifying deaths; permitting and licensing health- and environmentally-related activities; and, sometimes, sending bills. For this reason, they actually have the greatest need to manage information electronically. Repeatedly re-transcribing the information they gather (whether on paper or into internet applications) is the way most such work is performed today. This results in wasted effort and data quality loss precisely where labor and precision are most needed in an emergency.

Today some local health departments serve as creative laboratories for the health information infrastructure. Examples include Kansas City's public-private partnership for electronic laboratory reporting[1]; New York City's testing of sophisticated algorithms for rapidly detecting disease outbreaks[2], and use of an emergency medicine internet network for early SARS detection in Milwaukee, Akron, Denver and Fort Worth[3]. Local departments are also making heavy use of Geographic Information Systems (GIS), to help track, understand and manage health events. While most local health departments cannot build such projects from scratch, it is notable how quickly they adopt new sources of information once they are practically available. If NHII can build a practical socket, local health departments will build (and share) appliances to plug into it.

For this reason the true test of a nation's health information infrastructure is not whether health information reaches the Centers for Disease Control and Prevention (CDC). The real test is whether information rapidly reaches local public health officials in a way that it can be readily integrated into the day-to-day work of local public health protection. Federal policy decisions can play a crucial role in this outcome.

For example, a 1999 NACCHO survey disclosed that fewer than half of all public health officers had continuous high speed access to the Internet. A Congressional requirement that states utilize a substantial proportion of federal Health Alert Network spending at the local level to assure connectivity has radically changed this picture. Now a high proportion of local health departments can send and receive email and other information efficiently, reliably and continuously.

Unfortunately, FY 2005 Administration appropriations requests (and related DHHS reprogramming of FY 2004 bioterrorism preparedness funds) appear to move in the opposite direction. Funds to state and many local health departments are reduced, in part to fund the national BioSense initiative undertaken by the Centers for Disease Control and Prevention (CDC). BioSense, which aims to comb through large national collections of electronic data in order to provide early warning of outbreaks is a worthy, if highly experimental, project for the nation. However, it is essential to remember that it will be local health departments that, when alerted to abnormal disease trends, will do the legwork to validate such suspicions and actually manage the outbreaks. Reduced funding for state and local agencies defeats the overall vision. We urge Congress and the Administration to support instead the larger CDC vision of a Public Health Information

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[1] Hoffman MA. Wilkinson TH. Bush A. Myers W. Griffin RG. Hoff GL. Archer R. Multijurisdictional approach to biosurveillance, Kansas City. Emerging Infectious Diseases 2003; 9(10):1281-6.

[2] Das D. Weiss D. Mostashari F. Treadwell T. McQuiston J. Hutwagner L. Karpati A. Bornschlegel K. Seeman M. Turcios R. Terebuh P. Curtis R. Heffernan R. Balter S. Enhanced drop-in syndromic surveillance in New York City following September 11, 2001. J Urban Health 2003; 80(2 Suppl 1):i76-88.

[3] Foldy S, Barthell EN, Silva JC, Biedrzycki P, Howe DS, Erme M, Keaton B, Hamilton CL, Brewer LK, Miller G, Bernstein R, Eby E, Pemble K, Fenton C. SARS Surveillance Project: Internet-enabled multi-region syndromic surveillance for rapidly emerging disease. MMWR Suppl – [in press]

Network (PHIN), an enterprise model of information management across local, state and federal systems, not just a single component. Both nationwide projects and local capacity need support, not one at the expense of the other.

I do not wish to imply that local government should play no role in funding its own participation in the national health information infrastructure. Such a system must be built by many stakeholders working and investing together. But there is a highly understandable reluctance to make major local investments at this time (even using federal grant dollars). Our history with new information technology is littered with two types of problems. The first occurs when software projects are promised at low cost, but they arrive late, deliver less than promised, and are not supported with appropriate training, technical support, and updated versions on a timely basis. The second problem occurs when local information system initiatives are rendered obsolete by new, seemingly arbitrary, state or federal requirements for new and different types or forms of information from local partners. Local health departments are no different than private enterprises; they have limited resources and require predictability and consistency before they can afford to undertake major investments.

I encourage the Subcommittee, the Congress and the Administration to take consistent steps to ensure that local public health departments are equipped to play an active role in the evolving national health information infrastructure. Here is our "prescription for success":

1.) Establish a measurable yardstick for the capability of public health and health care providers to electronically send and receive a high-value set of standardized electronic health messages. These would be messages that can be interpreted independently of proprietary software or hardware and that can transmit such information as patient name, provider name, address, reportable disease laboratory results, vaccination, or antibiotic prescriptions. Then monitor yearly the proportion of local health departments, hospitals, laboratories, pharmacies and physicians that have attained this capability. Poor progress in this proportion will sound the alarm that our NHII initiatives are failing to engage the producers and end-users of health information. When such standardized health messages are defined to the extent they can be used interoperably by different information systems, *and* when they can be sent and received by a meaningful proportion of players in the health system, we will rapidly see development of applications that put this information to use.

2.) Establish the following standard for federally-funded health information management projects: Regardless of where or how information is stored, local public health officers need 24-hour, 7-day-a-week access to the information they need to manage problems in their jurisdictions.

3.) Require that the governance of federally-funded health information infrastructure investments at both state and federal levels include meaningful representation of local public health departments. This is necessary to ensure that the work processes and business requirements of local health departments are considered in the design of

applications and networks, and that true local costs for hardware, software, training, technical support and life-cycle management are addressed in planning. Very modest funding for skilled staff to represent local needs in such forums can minimize the likelihood of much greater spending on projects that fail to work.

4.) Ensure that local public health partners are included in federally-funded regional health information exchange projects and authorities. NACCHO endorses the concept that practical innovation and lessons will emerge most rapidly in local or regional health information exchanges.

5.) Learn from the Health Alert Network program. Requiring that federal funds ultimately reach local health departments for targeted goals can spur rapid development.

6.) Improve the chances of success by supporting practical training in information system leadership and management for local public health executives and their counterparts in other local public safety agencies.

7.) Finally, support officials like Dr. David Brailer and CDC's Dr. Claire Broome as they try to ensure adherence to generic standards for public investment in information systems. Public funds should no longer be spent to lock information into proprietary boxes.

Thank you for your interest and leadership in this critically important area. I will be pleased to answer any questions you may have.

Mr. PUTNAM. Thank you.

Our next witness is Dr. Richard Weisman. Dr. Weisman is an associate professor of pediatrics at the University of Miami School of Medicine at Jackson Memorial Hospital and the director of the Florida Poison Information Center in Miami. Dr. Weisman received his undergraduate training in pharmacy at Temple University and his doctorate in clinical pharmacy from Duquesne University. He is board certified in toxicology and a fellow of the American Academy of Clinical Toxicology. Dr. Weisman serves as the Medical Information Office for south Florida's Metropolitan Medical Response System, a member of the Terrorism Advisory Task Force, and as a toxicologist/pharmacologist with the Department of Homeland Security, FEMA, Disaster Medical Assistance Team, and the International Medical Surgical Emergency Response Team.

Welcome to the subcommittee. You are recognized for 5 minutes.

Mr. WEISMAN. Thank you very much, Mr. Chairman, members of the subcommittee. My name is Dr. Richard Weisman. I am director of both the Hospital Terrorism Response and the Florida Poison Information Center in Miami.

Jackson Memorial Hospital is the largest public hospital and a safety net in Florida. With over 1,500 beds, Jackson Memorial provides the highest level of care to an inner city culturally diverse population. The Florida Poison Information Center in Miami provides service to a population of 5 million people and has 63 hospitals within its region. Jackson Memorial Hospital is the largest hospital within the Poison Center's region.

I would like to describe the experience we had at the epicenter of the anthrax attack in Florida and to highlight the problems that could be prevented with enhanced information technologies at our Nation's hospitals and poison control centers.

On the morning of Thursday, October 4, 2001, Steven Wiersma the Florida State Epidemiologist, released to the public that the State laboratory had confirmed that a patient, Robert Stevens, at JFK Hospital in Palm Beach County, had inhalation anthrax. This was followed by a press conference in which the Florida commissioner of health and State epidemiologist announced that the public should not be concerned, that anthrax was a naturally occurring disease, and that this could not possibly be a terrorism event.

It is important to set the stage of the public's mind-set on this date. Most notably it was occurring in the shadow of September 11, where virtually every television and radio station was still on a 24-hour post-September 11 frenzy. What may not have been evident to the rest of the country is that the infectious disease physician at JFK made the diagnosis because that week the local news had reported that two of the September 11 hijackers had attempted to rent a crop-duster at nearby Lantana Airport. When the inhalation anthrax story went front page, the media immediately connected the dots and concluded that it was terrorism and supported their hypothesis with the CDC data that there were only 18 inhalation cases in the past 100 years, the last occurring in 1978.

It was too coincidental in the wake of the Lantana Airport story. The commissioner of health kept insisting that this was an isolated occurrence and a rare disease, until 4 days later, when a second patient was identified in south Florida. The public became very

confused, very angry, and lost confidence in our government's response to the crisis.

I first learned about the anthrax case in the emergency department at Jackson Memorial Hospital, when a patient who had been watching the press conference on television in the waiting room came in and asked me what I thought of anthrax. I thought he was talking about the 1990's rock group. In the emergency department, we are very disconnected from the world and need a new way of being kept up to date while actively seeing patients. Most emergency departments in the United States have telephones, fax machines, and receive electrocardiograms from the field from paramedics. We truly are well into the 1970's. We have a computer terminal that links us to the hospital's data base that allows us to look up some lab data, if it had been entered, but it really doesn't allow us to receive e-mails or to access the Web, because that would be a violation of security, and certainly someone is sitting there waiting to hack into our data system.

On Friday, October 5th, the Poison Center received about calls related to anthrax. Approximately 50 were from coworkers at the American Media International, or AMI, building who had direct contact with Mr. Stevens, half were from the emergency department physicians in search of recommendations for patients requesting prescriptions for cipro, and the remainder were from the media in search of additional information about anthrax. Thirty-six hours after the initial press conference, the Poison Center finally received a fax sheet from the CDC discussing anthrax and providing much needed guidelines to treat only patients that had been in the AMI building for at least 1 hour within the last 3 months. Not knowing if this valuable fax sheet was going to get to our emergency department physicians, we faxed the document to every emergency department in our catchment area. We subsequently learned that only half of the hospitals ever received it from CDC, and only 10 percent got it at the total end from the Poison Control Center.

On Monday, October 7th, all hell broke loose. The emergency department at Jackson Memorial saw an additional 65 patients. Many hospitals in the area also had a dramatically increased census. The Poison Center went from receiving about 300 calls a day to over 300 calls per hour. The actual number of calls that the Poison Control Center received we will probably never know because the automatic call tracking system kind of stopped at about 4,000 calls, and that was reached sometime by about 2 in the afternoon. By afternoon, the Poison Center abandoned trying to record the cases because the phones were ringing so quickly, and people that had real poisonings could not get through on the standard number. An additional four poison information specialists were brought in, and all of the rotating medical students, pharmacy students, and medical residents were asked to help with the telephone.

When an additional staff person arrived with a newspaper, we learned for the first time what had happened. The headline stated that the anthrax spores had been found by the CDC in the AMI building. Later that day information were released that spores had also been found in the nasal swab of another AMI worker. Rumor also began to circulate that a second patient, also from AMI, was being investigated as a second victim in a Miami hospital. By day's

end, his identity was known, Mr. Ernesto Blanco. He was at Cedars Medical Center, immediately across the street from where we were located, and he was Mr. Stevens' boss in the mailroom at AMI. They had received a threatening letter containing a white powder. The media was now announcing that this was another terrorism attack and that anthrax had been sent through the mail. Before it was over, hazardous materials response teams had to respond to 15,000 false calls for white powders. Nationwide, it exceeded over 65,000.

The call volume at the Poison Center and the patient volume in the emergency department continued to be out of control for about 7 days, finally returning to some level of normality about October 14th. The contacts were primarily occurring between the hours of 8 a.m. and 9 p.m., and on October 13th the Florida Department of Health began to refer all of their calls into the Poison Control Center. The normality was very short-lived. On about October 16th letters arrived at CBS, ABC, the New York Post in New York, and the Hart Office Senate Office Building here in Washington. The high profile exposure stood in stark contrast to the death and illness of the less well-known postal workers. Anthrax was killing the common man. The barrage of calls would continue through October to just before Thanksgiving. The calls now began to be mixed with inquiries about adverse reactions that were occurring with a high frequency of people and the over 5,000 that were not having to take cipro.

We have a remarkable opportunity to improve patient care through improved communication strategies and e-technology. An investment at the healthcare delivery will allow us to be better prepared for an array of adverse events such as a SARS outbreak or any newly emerging infectious disease or chemical or nuclear event.

I have four recommendations. There needs to be a secure means of communicating the most accurate, up-to-date information.

Mr. PUTNAM. If I may, let me make that one of my first questions to you. I am worried about us getting caught by a vote, and I want everyone to have an opportunity to go. So if you would, just hold that thought and I will come back to that.

Mr. WEISMAN. OK.

[The prepared statement of Mr. Weisman follows:]

United States House of Representatives

Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census.

July 14, 2004
2:00 P.M.

Testimony of:

Richard S. Weisman, Pharm.D., ABAT

"Information Sharing and Emergency Response: The Hospital"

Representing:

The Florida Hospital Association
and
Jackson Memorial Hospital
1611 NW 12th Avenue
Miami, Florida 33136

Summary: Dr. Richard Weisman is a Co-Director of the Hospital Terrorism Response Program at Jackson Memorial Medical Center, Miami, Florida. Dr. Weisman is also the Director of the Florida Poison Information Center – Miami, and a Research Associate Professor of Pediatrics at the University of Miami School of Medicine and Jackson Memorial Medical Center. Dr. Weisman will be testifying about his experiences during anthrax attacks of 2001 and will describe the communication barriers that exist at our hospitals.

Federal Grants:

CFDA: 93-253-01 Poison Center Stabilization & Enhancement, 2001	$261,491.00
CFDA: 93-253-02 Poison Center Stabilization & Enhancement, 2002	$280,169.00
CFDA: 93-253-03 Poison Center Stabilization & Enhancement, 2003	$298,847.00

Testimony of:
Richard S. Weisman, Pharm.D., ABAT

Mr. Chairman and Members of the Subcommittee: My name is Dr. Richard S. Weisman. I am the Director of both the Hospital Terrorism Response Program at Jackson Memorial Medical Center and the Florida Poison Information Center in Miami. Jackson Memorial Hospital is the largest public hospital and a safety net in Florida. With over 1500 beds, Jackson Memorial provides the highest level of care to an inner-city, culturally diverse population. The Florida Poison Information Center – Miami provides service to a population of 5 million people and has 63 hospitals within its region. Jackson Memorial Hospital is the largest hospital within the Poison Center's region.

I would like to describe the experience we had at the epicenter of the anthrax attack in Florida and to highlight the problems that could be prevented with enhanced information technologies at our nation's hospitals and poison control centers.

On the morning of Thursday, October 4, 2001, Steven Wiersma, MD the Florida State Epidemiologist released to the public, that the State Laboratory had confirmed that a patient (Robert Stevens) at JFK Hospital in Palm Beach County, had inhalation anthrax. This was followed by a press conference in which the Florida Commissioner of Health and the State Epidemiologist announced that the public should not be concerned, anthrax is a naturally occurring disease and that this was not terrorism.

It is important to set the stage of the public's mind-set on this date. Most notably, it was occurring in the shadow of 9-11-2001 where virtually every television and radio station was still in a 24-hour/day – post 9/11 frenzy. What may not have been evident to the rest of the country is that the Infectious Disease Physician (Larry Bush, MD) at JFK made the diagnosis because that week the local news had reported that two of the 9/11 hijackers had attempted to rent a crop-duster at the nearby Lantana Airport. When the inhalation anthrax story went front page, the media immediately concluded that it was terrorism and supported their hypothesis with CDC data that there were only 18 inhalation cases in the past 100 years, the last being in 1978. It was too coincidental in the wake of the Lantana Airport story. The Health Commissioner kept insisting that this was an isolated occurrence of a rare disease until four days later when the second case was identified in South Florida. The public became very confused, angry and lost confidence in our Government's response to the crisis.

I first learned about the anthrax case in the Emergency Department of Jackson Memorial when a patient who had been watching the Press Conference on the television in the waiting room, asked what I thought about anthrax. I thought he was talking about the 90's Rock Group. In the Emergency Department, we are very disconnected from the world and need a new way of being kept up-to-date while actively seeing patients. Most emergency departments in the United States have telephones, fax machines to receive electrocardiograms from paramedics in the field, and a computer terminal securely linked to the Hospital's Electronic Medical Record System. Most do not allow outside access to either e-mail or the internet to safeguard the security of patient's medical records.

On Friday, October 5, 2001, the poison center received about 300 calls related to anthrax. Approximately 50 were from co-workers at the American Media International (AMI) building who had direct contact with Mr. Stevens, half were from emergency department physicians in search of recommendations for patients requesting prescriptions for "cipro", and the remainder was from the media in search of additional information about anthrax. Thirty-six hours after the initial press conference, the poison center received a fact sheet from the CDC discussing anthrax and providing much needed guidelines to treat only people that had been in the AMI building for at least one hour, within the last three months. Not knowing if this valuable fact sheet was going to get to the emergency room physicians, we faxed the document to every emergency department. We subsequently learned that only half of the hospitals ever received the Fact Sheet from the CDC and about 10% never received the copy we faxed to the ER.

On Monday, October 7, 2001 all hell broke loose. The Emergency Department at Jackson Memorial saw an additional 65 patients with concerns about anthrax exposures. Many hospitals in the area also had an increase census. The poison center went from receiving less than 300 calls/day to receiving over 300 calls/hour. The actual number of calls that the Florida Poison Information Center – Miami received can only be estimated. Our automatic call distribution (ACD) system indicated that we had exceeded 4,000 calls per day. That morning the Poison Center abandoned recording cases into the computer call tracking system because the telephone system was completely overwhelmed and routine poisoning calls were unable to get through. An additional 4 poison information specialists were brought in and all of the rotating medical students, pharmacy students, and medical residents were asked to help with the telephones.

When an additional staff person arrived with a newspaper, we learned for the first time what happened. The headlines stated that anthrax spores had been found by CDC in the AMI Building. Later that day, information was released that spores had also been found in a nasal swab of another AMI worker. Rumor also began to circulate that a second patient, also from AMI, was being investigated as a second victim in a Miami hospital. By day's end, he was identified as Mr. Ernesto Blanco, he was at Cedars Medical Center in Miami, and he was Mr. Stevens' boss in the mailroom at AMI. They had received a threatening letter containing a white powder. The media was now announcing that this was another terrorism attack and that anthrax had been sent through the mail. Before it was over, hazardous materials response units investigated nearly 15,000 suspicious white powder episodes.

The call volume at the poison center and the patient volume in the emergency departments continued to be out-of-control for about 7 days, finally returning to near normal on October 14th. The contacts were primarily occurring during the hours of 8am to 9pm. On October 13th, the Florida Department of Health began to refer all calls to the State's three Poison Centers during the evening hours and on weekends. The normality was short-lived. On about October 16th letters arrived at CBS, ABC and the New York Post in New York, and the Hart Senate Office Building in Washington. The high profile exposures stood in stark contrast to the deaths and illnesses of the less known postal

workers. Anthrax was killing the common man. The barrage of calls would continue through October to just before Thanksgiving. The calls now began to be mixed with inquiries about adverse reactions that were occurring with high frequency among the 5,000 plus that were now taking CIPRO for 60-100 days.

We have a remarkable opportunity to improve patient care through improved communication strategies and e-technology. An investment at the level of health care delivery will allow us to be better prepared for an array of adverse events such as a SARS outbreak, or any newly emerging infectious disease or a chemical or nuclear event.

1. There needs to be a secure means of communicating the most accurate and up-to-date information to our hospitals, emergency departments, poison centers, pre-hospital care providers, private physician's offices and health departments. At present, there is no effective means of getting life saving technical information to our nation's front line care providers.
2. Hospitals, Poison Centers, Emergency Medical Services and Health Departments in areas of the U.S. considered to be at risk for terrorism, must be provided the resources to be able to manage a surge of affected patients. Information technologies will allow us to provide optimal care and to utilize our scarce resources most effectively. However, if our large inner-city hospitals are at 105% occupancy and there are patients waiting in the emergency department, our response to a catastrophe may be less than optimal.
3. The Federal Government must make immediately available to the media, knowledgeable and informed experts. We witnessed expert opinions on anthrax from retired microbiologists who were honored to give their uninformed opinion, and add to the confusion and hysteria.
4. A media campaign needs to occur in advance of the next crisis to educate people about the investigation of a disease outbreak or terrorism event. They need to understand that event investigation takes time. The information available during the first few days may be incomplete or inaccurate.

Mr. PUTNAM. Our third witness for this panel is Gordon Aoyagi.

Mr. AOYAGI. Correct.

Mr. PUTNAM. Did I say that right?

Mr. AOYAGI. Yes, very well.

Mr. PUTNAM. Mr. Aoyagi is the fire administrator for Montgomery County, MD. He directs the efforts of approximately 950 career employees and 800 volunteers. Mr. Aoyagi also coordinates the fire and rescue services which are provided through 19 local volunteer departments. He serves as a disaster manager of the Emergency Management Group, responsible for emergency preparedness in response for Montgomery County. He is also Chair of the local Emergency Planning Council and commissioner on Maryland State Fire Prevention Commission. Mr. Aoyagi has over 30 years of public administration and public policy experience. He is a graduate of Colorado College, with a master's degree in public administration from the University of Colorado.

Welcome to the subcommittee. You are recognized for 5 minutes.

Mr. AOYAGI. Thank you very much, Chairman Putnam. I appreciate the opportunity to provide the perspectives of a local government emergency manager on this topic.

Slide 2 shows that Montgomery County is a growing suburb of the region, plays an important role, and is well practiced in responding to emergencies. Montgomery County has made significant investments in our public safety communication networks and our wireless data systems. Effective health informatics and other emergency response systems will depend upon robust, redundant, and reliable wireless data systems. We encourage continued congressional support for this technology. Push this technology down to local government; it is the battle front of our local communities where first responders confront the emerging terrorist threats, as well fulfill their daily mission of keeping our communities safe and saving lives.

Technology infrastructure is a necessary element for health informatics, but is it sufficient? Ingredients for success include: planning, collaboration, and communications. And I would like to use Montgomery County as an example.

Montgomery County has a disease surveillance system called ESSENCE II. Through the leadership of our Maryland congressional delegation, we received a 2002 Federal Byrne Grant, which was used to develop a test bed for a sophisticated disease surveillance system. ESSENCE II, described in slide 3, is the first system to integrate both the military and civilian indicators for disease surveillance. It uses traditional and non-traditional health indicators in syndromic groups, coupled with advanced analytical techniques. The Applied Physics Lab of Johns Hopkins University developed ESSENCE II in collaboration with the Department of Defense Global Emergent Infection Systems and other State and local partners.

ESSENCE IV, which is our new generation, will in fact be installed throughout the region and Northern Virginia and the State of Maryland.

Slide 4 shows the various sources used by ESSENCE II for biosurveillance. Among these sources are hospital laboratories, 911

calls, over-the-counter drug purchases, etc. Other variables are also considered.

Slide 5 shows the syndromic grouping used for analysis. Baseline data is projected and any unusual spikes are investigated. Any significant event allows us to detect, respond, and contain locally, regionally, and statewide.

Slide 6 shows the application of ESSENCE II in predicting the recent influenza and the tracking of its incidents through that same disease surveillance system.

Planning is also important. The Emergency Management Group established a bioterrorism task force to plan, discuss respective roles, and develop a unified command system for bioterrorism incidents. This framework served us well in the anthrax response in 2001. In planning for future events, we are provided pre-distribution biomedical packs to our first responders, and we continue to plan for SARS and other events.

Collaboration is essential. We recognize that hospitals are key elements of our emergency response system and engage them in extensive collaboration efforts. Our five hospitals are on our 800 megahertz radio system. Administrators or doctors may talk to other hospitals, public health representatives, our emergency communication center, as well as the incident commander. We also share decontamination protocols. The county recently executed a Memorandum of Understanding with our five hospitals, National Institutes of Health, Navy Medical, and Kaiser Permanente to rapidly provide supplies, equipment, and credentialed medical personnel to maximize medical services during emergencies in the county and in the region.

Lateral and horizontal communications are also required. Our public health division uses email and hot faxes to provide public health alerts to physicians and clinics. The RICCS system in this region provides notification to our regional policy leaders, healthcare providers, and Federal officials.

In the State of Maryland we have what we call FRED, the Facilities Resource Emergency Data base, which provides state-wide hospital capabilities, as well as a secure method of notification to hospitals throughout the State.

In closing, I believe the prescriptions for success involve ongoing support for local governments to respond to emergencies; enabling the transfer of effective technologies to local governments; funding of robust, reliable, and redundant wireless technology to support healthcare and emergency medical providers; and, last, coordinated, collaborative, and integrated planning and response systems at the local, regional, State, and Federal levels.

Thank you.

[The prepared statement of Mr. Aoyagi follows:]

House Government Reform Subcommittee
On Technology, Information Policy, Intergovernmental Relations and the Census
July 14, 2004
Rayburn House Office Building, Room 2154

"Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

Gordon Aoyagi
Fire Administrator
Montgomery County Fire and Rescue Service
Montgomery County, Maryland
101 Monroe Street
Rockville, MD 20853

Honorable Chairman Putnam and members of the Subcommittee. Good afternoon. I am Gordon Aoyagi, Fire Administrator for the Montgomery County Fire and Rescue Service for Montgomery County, Maryland.

Montgomery County, Maryland is a suburb of Washington, D.C. Our population is over 900,000 and we continue to grow in population and employment. The County is ethnically, culturally and economically diverse and is the most diverse county in the State of Maryland. Our County is home to several federal installations – NIH, NOAA, NIST, NRC, Department of Health and Human Services, Department of Energy - to name a few. Our educational institutions include campuses for the University of Maryland, John Hopkins University and Montgomery College. Our I-270 Technology Corridor is home to several large and emerging biotech companies.

The County is a member of the Washington Metropolitan Council of Governments through which regional partners enjoy strong regional coordination, communication and regional governance. Mutual aide among member local governments is very robust, particularly among fire and rescue departments where resources may flow freely across boundaries upon request.

As the Fire Administrator, I am responsible not only for the operations of the fire and rescue service but also for the County's Office of Emergency Management. I serve as the Disaster Manager when the County's Emergency Management Group activates our Emergency Operations Center during major emergencies or disasters. The Emergency Management Group includes all or most of our over 20 major departments of the County as well as our municipalities, utilities, public schools, community college and volunteer services. A key participant of the Emergency Management Group is the County's Public Health Division.

The Emergency Management Group deals with the mitigation of consequences of a major incident or disaster that exceed the operational response of our unified incident command, support and coordinate with our regional partners in the National Capital Region as well as the State of Maryland and restoration of the physical, social and economic wellbeing of our County . Depending upon the nature of the disaster or incident, we also plan for the coordination and insertion of state and federal support and resources upon declaration of an emergency by our County Executive and our Governor.

Montgomery County has a history of effective emergency management including preparations and response to the Year 2000 computer and infrastructure issues, the September 2001 Pentagon attack, October 2001 Anthrax incidents including medication for Shady Grove Postal employees, the July 2002 Amtrak derailment, the October 2002 sniper attacks and most recently Hurricane Isabel in fall 2003. In addition, we have had numerous exercises for planning and training for field and emergency management group response to incidents involving weapons of mass destruction, including "dirty bombs" and biological agents. We work hard at preparing our first responders, planning for emergency management and informing our residents for the new threat environment that we live in.

We appreciate the opportunity to add the local government and emergency response perspective on the important topic of health informatics and prescriptions for success in intergovernmental information sharing.

Many of the speakers will address the many technology issues involved in health informatics. Local governments, including Montgomery County, have made and continue to make significant investments in the installation, operation and improvements of our public safety communications networks – which include fire, police, transportation and public health. Local funding is supporting our wireless data systems, which we view is still in its infancy. Health informatics, which enhances emergency medical services provided by first responders, will depend upon robust, redundant and reliable wireless data systems. We encourage and endorse continued Congressional support in policy direction and funding for the enhancement of this technology and promoting its delivery for local government applications, which has use not only for heath informatics but also for public safety services. It is the "battlefront" of our local communities, which include federal buildings and installations, where first responders confront the emerging terrorist threats as well as fulfill their daily mission of keeping our communities safe and saving lives.

We also express our appreciation to our Maryland delegation – Senators Sarbanes and Mikulski and our Representatives Van Hollen and Wynn and our former Representative Morella for their cooperation, support and leadership in providing federal funds to assist in the implementation of some of the initiatives described further in this testimony.

Technology infrastructure is a key and vital element for health informatics and represents the necessary components for successful intergovernmental information sharing. But is it sufficient? As a local government emergency manager, let me offer the perspective of other ingredients for success involving the effective use of the information provided in emergency response and action plans. These other ingredients include: planning, collaboration and communications among emergency response providers.

Electronic Surveillance System for Early Notification of Community-based Epidemics – Version II (ESSENCE II) – Application of Health Informatics

First of all, it should be noted that Montgomery County provided the initiative and the test bed for a sophisticated disease surveillance system for the County, which is anticipated to be extended to the State of Maryland and National Capital Region. The Electronic Surveillance System for Early Notification of Community-based Epidemics, Version Two (ESSENCE II) is the first system to integrate both the military and civilian indicators for disease surveillance using traditional and nontraditional health indictors in syndromic groups coupled with advanced analytical techniques. Prior to September 11, 2001, Montgomery County's Public Health Division collected disease outbreak information manually. With funding provided by the 2002 Byrne Grant, the County allocated a portion of these funds for the development of a disease outbreak surveillance system using advanced information technology. The Applied Physics Laboratory (APL) of John Hopkins University developed ESSENCE II in collaboration with the DOD Global Emerging Infections Systems and the cooperation with our five private, non-profit hospitals, the State of Maryland Department of Health and Mental Hygiene, and other health care providers, including fire and rescue.

ESSENCE I is a worldwide military Syndromic surveillance system operated by the DOD Global Emerging Infections System. ESSENCE II obtains additional data from community sources and integrates both military and civilian health care indicators. Information sources include hospital laboratory results and encounters with health care professionals. Other data sources include 911 calls, EMS transports, nurse hotline calls, poison center calls, visits to private practice physicians and military clinics, emergency room visits, prescription medication purchases, over the counter (OTC) drug purchases, veterinary clinic calls and services and public school absenteeism patterns. Variables include the weather, seasonal promotions, community events and local and international news. Baseline data is projected and any unusual spikes in syndrome groupings are subject to further review and analysis by the County's highly trained epidemiologists.

ESSENCE II alerting notification protocols are established for public health officials, emergency rooms, urgent care providers and emergency service responders in the County, the National Capital Region, the State of Maryland and federal government.

Planning

Prior to 9/11 and the anthrax attacks, we had been concerned with the possibilities of bio-terrorist incidents and there was also discussion of the possible return of pandemic

flu outbreaks during the first part of new century. The Emergency Management Group established a Bio-Terrorism Task Force, consisting of fire, police, public health, transportation, environmental protection, schools and sheriff representatives. Public health represented disease control as well as health care providers, including the hospitals. Early planning efforts, discussion of respective roles and relationship building developed a unified command system for bioterrorist incidents. This framework facilitated the County's immediate and effective response to the anthrax incidents of 2001. The Bio-Terrorism Task Force developed 911 call taking protocols, a bioterrorism community hotline, HAZMAT strike team, health care clinic assessment center, communication network with health care providers and businesses, a framework for responding to request from the Shady Grove Postal facility for medication distribution and information coordination from State, Federal and other local sources for the County Executive's announcements and directions to the public.

This task force continues in operation. It developed and implemented pre-distribution of bio-medical packs to our first responders. Information has been provided to first responder families to notify and consult with their family physicians about their spouse or family member being a first responder and the need to receive preventive medication by prescription when an event occurs. The task force focused upon the SARS epidemic and is developing appropriate response actions plans for notification, isolation, quarantine and first responder protocols and protections. Additionally, the task force continues to work on and support the NIMS structure for incident command for public health events, the operations and logistics for receipt of the Strategic National Stockpile, distribution of medical supplies and equipment and the operation of medical dispensing sites.

Collaboration

Response to major disease outbreaks, naturally occurring or induced through the release of biological agents or community disasters, place great strain on primary health care providers, our hospitals. They are key elements of the emergency response system for major disasters.

In Montgomery County, we have included our five hospitals in our 800 MHz radio system. The hospitals administrators can talk to each other, public health representatives, our pubic safety communications center (fire, police and transportation) and the incident commander. This hospital radio net is tested frequently and provides essential as well as redundant communications.

Collaboration has also occurred to have our fire and rescue HAZMAT team provide direct hands-on training to emergency room and hospital staff on decontamination protocols and equipment. Our hospitals have agreed to purchase the same decontamination equipment and jointly train with fire and rescue. This assures mutual knowledge of capabilities and equipment and seamless support of fire and rescue personnel for hospital decontamination activities of persons entering or leaving facilities.

In addition, we have recently executed a Memorandum of Understanding between the County and our five private, non-profit hospitals, NIH, Naval Medical and Kaiser Permanente to rapidly provide supplies, equipment and credentialed medical personnel to hospital(s) receiving disaster patients. Protocols were established for hospital incident command for managing logistics and operations for sending and receiving hospitals to receive, to divert and to offload patients to maximize medical services during emergencies in the County and in the region. This framework acknowledges that surge capacity is not just a matter of providing additional beds for patient care.

Communication Systems

Once surveillance information is obtained, notifications of emergency responders and health care providers must be in place to facilitate information sharing laterally and horizontally. Laterally, our Public Health Division utilizes email and "hot faxes" to provide public health alerts to physicians and clinics. The 800 MHz radio net provides immediate notification to our local hospitals. The Regional Information Coordination and Communication System (RICCS) operated by the MWCOG provides for the notification of policy leaders and other regional health care providers.

To assist hospitals and emergency managers in assessing hospital resources throughout the State, the Maryland Institute for Emergency Medical Services Systems (MIEMSS) operates a Facilities Resource Emergency Data Base (FRED) to provide macro-views of hospital capabilities as well as micro-reports of inventory of critical supplies and equipment. FRED also provides a secure method of notification of events and situational updates to hospitals throughout the State. FRED is operated by the Emergency Medical Resource Center which may also provide directions on bed availability at specific hospitals in the State and coordinate with helicopter transport.

It should be noted that while fire and rescue personnel are involved in medical triage and transport, should the event involve a specific incident and location, law enforcement personnel will support the incident through security and evidence gathering. Upon completion of emergency medical and rescue mitigation activities, the scene transitions to law enforcement for investigation and coordination with public health officials.

In closing, I believe that prescriptions for success for health informatics in our region involve:

- recognition of and the on-going federal support of the roles and responsibilities of local governments in responding to disasters and emergencies as first responders;
- enabling of technology transfer to public health, health care and emergency medical providers at the local level through development and funding of infrastructure and effective health informatics systems;
- funding for the development and continuous improvement of robust, reliable and redundant wireless data technology to support health care and emergency medical providers; and

- Coordinated, collaborative and integrated planning and response systems among public health, public safety, hospitals and emergency management agencies at the local, regional state and federal levels.

Thank you.

Testimony to the House Government Reform Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

Gordon A. Aoyagi, Fire Administrator
Montgomery County Fire Rescue Service
July 14, 2004

1

Montgomery County, Maryland

- Population 931,000 (est. 2004)
- Ethnically, culturally, economically diverse
- Mobile Community (61% of Montgomery County Residents Work Outside of Montgomery County)
- Responsive Local Government
- Emergency Management Group
- Active Public Health Service, component of County's Department of Health and Human Services
- History of Responses to Disasters
  - October 2002 Sniper Attacks
  - July 2002 Amtrak Derailment
  - October 2001 Anthrax
  - September 2001 Pentagon

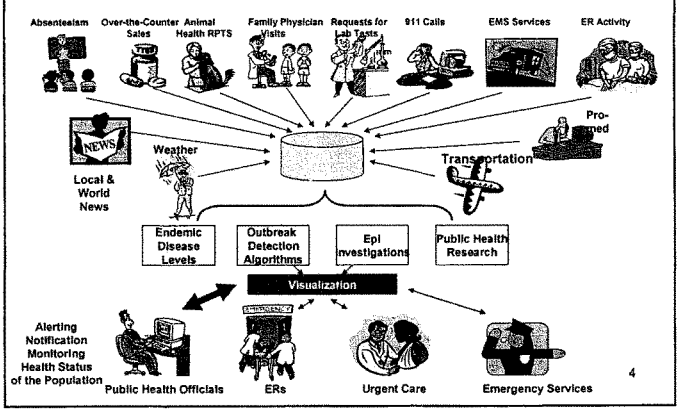
2

MONTGOMERY COUNTY'S DISEASE SURVEILLANCE – ESSENCE II

- First System to use military and civilian indicators
- Electronic Surveillance System for the Early Notification of Community-based Epidemics, Version II (Essence II)
- Cooperative Program: Johns Hopkins Applied Physics Laboratory, Montgomery County Public Health Service, Maryland Department of Health and Mental Hygiene, DOD Global Emergency Infections System, etc.
- Syndromic Surveillance
  - Three Categories of Data for Continuous Review and Analysis by Qualified Epidemiologists
    - Sensitive Health Care Information
    - Publicly Available Health Care Information
    - Products of External Surveillance

3

Concept for Aggressive Bio-Surveillance Using Non-Traditional Indicators



4

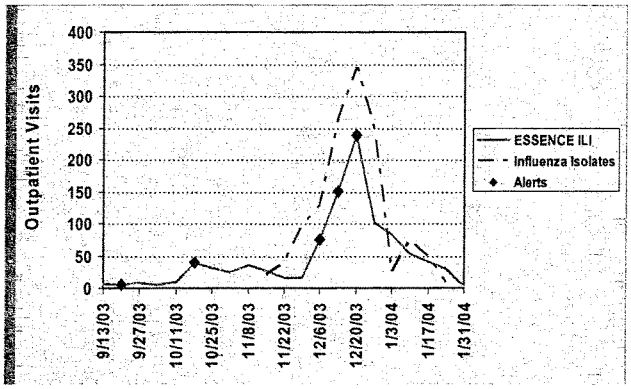
Essence II – Sensitive Health Care Information

- Chief Complaint Data from Hospital Emergency Departments
- International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)
  - Respiratory (cough, pneumonia, upper respiratory infection)
  - Gastrointestinal (vomiting, diarrhea)
  - Neurological (meningitis, botulism-like symptoms)
  - Dermatologic – hemorrhagic (petechaie, bruising)
  - Dermatologic – infectious (vesicular rashes)
  - Fever (unspecific fever, sepsis)
  - Coma (coma, sudden death)
- OTC Sales
- School Absenteeism Data
- Other Sources

5

Early Detection of Influenza: Montgomery County

13 Sept 2003 – 31 Jan 2004



Mr. PUTNAM. Thank you very much.

Dr. Weisman, why don't you wrap up the four recommendations that you had for us, now that we know we have time?

Mr. WEISMAN. There needs to be a secure means of communicating the most accurate and up-to-date information to all of our hospitals, emergency departments, poison centers, pre-hospital care providers, private physicians' office, and health departments. Too often we are depending upon CNN and Fox News to be able to get "accurate" information. The word "accurate" is certainly in quotation marks.

At present, there is no effective means of getting lifesaving technical information to our Nation's front-line healthcare providers. That needs to change.

Hospitals, poison centers, emergency medical services, and health departments in areas of the United States considered to be at risk for terrorism must be provided the resources to be able to manage a surge of affected patients. Information technologies will allow us to provide optimal care and to utilize our scarce resources most effectively; however, if our large inner city hospitals are at 105 percent occupancy and there are patients waiting in the emergency department, it is going to be very difficult for us to be able to accept a surge of patients, and our response to the catastrophe will be less than optimal.

The Federal Government must make immediately available to the media, knowledgeable and informed experts. We witnessed experts' opinions on anthrax from retired microbiologists who were honored to give their very uninformed opinion and to add to the confusion and hysteria. A media campaign needs to occur in advance of the next crisis to educate the people about the investigation of a disease outbreak or terrorism event. They need to understand that events take time to investigate and that in the very beginning or very early hours the amount of information may be very limited, and that it will grow exponentially as the powers are brought to work on the particular crisis. But what they are doing right now is they announce the crisis and then try to fill the next 24 hours with media, and it basically whips the public into a mystical frenzy.

This is something that we found to be absolutely contra to the grain of what we are trying to do and resulted in numerous patients coming into the emergency department that just didn't need to be there, and often them got there by ambulance, tying up very critical resources.

Thank you very much for this opportunity.

Mr. PUTNAM. Thank you.

Considering the benefits—we have heard an awful lot about all the benefits of using better information technology for health informatics—why haven't we seen greater adoption of these benefits by providers and payors? Dr. Foldy.

Dr. FOLDY. I think many of the factors were alluded to in the last session. Whereas the cost of the information systems is in itself a barrier, I think the two larger barriers are uncertainty and the workflow and the recruitment of the work force into doing work in a different way. Certainly it was true in my department, as it is in the healthcare setting. The uncertainty relates to the fear every-

body has in making an investment in the next great system that ends up not meeting the soon-to-be or later-to-be announced standards. Standardization is a requirement, giving both the informatics industry, the healthcare industry, and even the little public health department the confidence to go ahead and invest.

I have to tell you that many of the steps that we took that involved information management are still manual, because the standards were not quite yet ready, and I could not really move forward knowing that what is going to be for us a fairly long legacy of hardware and software. Because of the small amount of dollars available in local public health, I need to make sure it is going to work and integrate right the first time.

Finally, revolutionizing the flow of information from paper to electronic interface devices is going to require changes in the work of a large number of healthcare professionals, and that will be a difficult task. Very worthwhile, however.

Mr. PUTNAM. Anyone else wish to take a crack at that? Yes, sir.

Mr. AOYAGI. I certainly can't speak from the patient perspective, because my perspective is really one of a local emergency manager. And I can say that as I talk to colleagues across the country, as Dr. Gingrich referred to, there are a number of silos out there, and emergency management has a silo, health and human services has a silo, public health has a silo. I think what is emerging at your local government level are very strong efforts to break those silos down and to work in a more collaborative way; but it isn't easy. There are a number of turf issues, and it really comes down to focusing on delivery of service to the citizens, making sure they are safe, and leveraging of resources in the most effective way.

I think Federal leadership is important. It was important, when the Pentagon occurred, for the general to stand before all his troops and say the first responder is the incident commander. And I think as a result of that statement all the local resources that were available at that time were seamlessly inserted to that response. If we were to encounter a major bioterrorism event, and say the impact is local, if we suddenly had a Federal official announce that they were in charge, you would find mass confusion at the local level trying to determine do we wait or do we move. And I would just encourage that we all embrace the national incident management system and acknowledge the role of local government in responding first to the incident and then receiving the support of the State and Federal Government upon declarations of emergencies.

Mr. PUTNAM. Does the current homeland security structure reinforce what you just said?

Mr. AOYAGI. Yes, it does, both that and the announcement of the President with regard to the national incident management system reinforces a structured incident command system that acknowledges and recognizes the role of unified command at the local level.

Mr. PUTNAM. Dr. Weisman, did you want to add anything on why more people haven't adopted these standards practices?

Mr. WEISMAN. I think that the particular area that we are interested in looking at is a relatively easy one, and I am not sure why it hasn't been adopted. The CDC has an excellent communication system called Epi-x that allows the CDC to very rapidly communicate information out to 3,500 health departments, State health

departments, local health departments. This type of same system needs to be brought down to probably populations of 3 or 4 million and allow that same technology to be transferred in so that we can link all of the hospital physicians that will be caring for patients, all the infectious disease physicians, all the hospital emergency departments, so that instantly, when a problem is identified, they can begin to know that they have to change the way that they are practicing. Very similar to the way Epi-x works, I envision them being referred to a Web site, which they would then be able to log into with their secure certificate and be able to identify the information that they need to provide care to the patients. And this would be standardized because it would be coming from the highest authority, the most knowledgeable people.

The second thing is that I envision on the same Web site the possibility of being able to log in and to record patient information for patients that have similar symptoms that would have been detected under syndromic surveillance that are now being seen in that area, and that this data would then immediately become available to the local, State, and eventually the CDC to manage.

These are all very simple things that only require pushing out this Epi-x package that has been so well developed by CDC to a more local area, because currently the CDC system is limited with the fact that you can't send out a page, a telephone call, a call to home and a call to work to a billion different physicians across the country with all of those means of communication. What you need to do is to bring it down to one or two or three of these units existing for every 10 or 15 million population, and you would be able to effectively communicate the most accurate information down to the clinician, and we can turn Fox News off.

Mr. PUTNAM. There are some concerns that biosurveillance initiative data bypass State and local officials, and that it will have the effect of making the response more difficult. Traditionally, as you know, public health data has flowed up, but with the BI, some data, especially commercial data, may go straight to the feds. Do you think that there are safeguards in place to rapidly communicate the findings back to you, when that is essentially the reverse direction?

Dr. FOLDY. If information is going to travel at the speed of electrons, it doesn't necessary matter where it goes first, so long as all the good rich information reaches the local actor extremely promptly. It would not do me a great deal of good to be told that there is a hypothetical problem, there is a problem of unknown significance occurring in my area, but, unfortunately, we can't provide you with the names of the individuals affected, where they were seen, or where they live. I would be left with an alarm without clear action.

I see no reason, in the long-run, why information from such national data bases cannot travel through the CDC to the local health officer including these important personal identifier information types to which local health officers are authorized to have access in fighting infections. But until that part of the link is built, BioSense by itself comes nowhere close to a meaningful surveillance system that will actually generate action.

What this means, practically speaking, is although Web-type interfaces can do a lot of work for us, the real name of the game here is the ability to exchange electronic messages that give each of our agencies the information they need. Those messages obviously need to be kept secure and confidential, they need to reach only the type of official authorized to get them. But ultimately, ideally, patient information flows in a secure fashion from the point at which healthcare is being produced to the point at which it needs to be acted on by the local public health authority.

I just say the backward corollary is also the same There is no way I am going to recruit all of the physicians of the world to come to my great public health Web site; they are too busy doing work. What would be an ideal is that the physician, in their practice is busy doing work and receove an alert from me, the local health officer, saying be aware there are two cases of whooping cough in our community. If you see somebody coughing, you should think about it. That image literally can pop up on the screen as they are doing work in their own healthcare application, because my application has messaged their application. This, rather than wishing that everyone was going to check my Web site every 8 hours.

So, as you can see, we are all likely to continue using the applications to which our systems are wedded, just like we continue to live on the residential streets in which we have always lived. What we need is the freeway system whereby we can get from a residential system in Milwaukee to a residential street in Washington in short order, and that is what I think Dr. Gingrich was talking about, the ability to send information out to our existing legacy systems.

Mr. PUTNAM. Dr. Weisman, have the poison control centers been asked to submit information through the BI?

Mr. WEISMAN. We are one of the data sources that are currently being considered for BioSense and a couple of the other programs. The poison centers nationally have a realtime data surveillance. We standardized all the definitions about 12 years ago, and all of the data is collected and analyzed and mined by the American Association of Poison Centers and CDC at 10-minute intervals, and they are looking for some of the early markers that would indicate either biological, chemical, or nuclear events; and that is available in all 50 States, so it is a good system at the present time.

Mr. PUTNAM. You received the HANs?

Mr. WEISMAN. Excuse me?

Mr. PUTNAM. The health alerts?

Mr. WEISMAN. That gets as far as the health department and the county health department. That, I do not get. I was able to get Epix as a poison center director. I was very surprised. I share the information that I get with our hospital epidemiologist, who then also applied and was actually turned down to get on it. You see a person like that who is at a major point, and it is unfortunate because it is limited by the size of the system and how many users can be hooked into it. So that certainly that type of thing ought to change as we try to improve the flow of information.

Mr. PUTNAM. Well, those were the vote bills going off, so we are going to need to bring this in for a landing. Very quickly, any final comments? Mr. Aoyagi.

Mr. AOYAGI. Well, I just want to re-emphasize and thank the committee chair for holding this hearing and to underscore the role of local governments in responding to major emergencies, and that we are a partner to both State and Federal agencies. We need the information at our level. We shouldn't be preempted from using that information in order to respond, and we hope that the promise of health informatics makes the services that we deliver more effective and more efficient.

Mr. PUTNAM. Thank you.

Dr. Weisman.

Mr. WEISMAN. Final comment is that if I had to summarize into one sentence, we need desperately to get a very effective bi-directional flow of information in and out of hospitals. To date, it only is going to the level of the county health department, and then the communication seems to break down. So that I think that the next major step is to get it out to the level of the person actually taking care of the patient.

Thank you.

Mr. PUTNAM. Dr. Foldy.

Dr. FOLDY. In a way echoing the remarks of the other two speakers, information travels when there is trust, and then when there is a system. In Milwaukee we use systems that other people had already built for their own use, such as the EM system secure Internet. So we could take the information from CDC and push it out to emergency rooms. We weren't able to do that for doctors in their clinics because no such system or no such relationship existed. But I think that the national health infrastructure vision is likely to grow because local communities and all of the players in those communities get together and agree to share information the way Mr. Aoyagi says is what is happening in Montgomery County. Regional health information infrastructures will be built that have to learn all the hard lessons about how and when to communicate what types of materials, and to overcome the medical, legal, and other barriers.

At the same time, the Federal Government needs to play a critical role by really pushing standardization, using its purchasing power to encourage standardization, focusing resources on the efforts of these regional collaborations, and as lessons are learned at the regional level, to make them available to all of those nationwide who want to build the same kind of infrastructure.

Thank you.

Mr. PUTNAM. Thank you. Thank you all very much. We appreciate all of the input and testimony that all of our witnesses have provided. This was the subcommittee's first opportunity to explore the consolidated health informatics e-government initiative and the current state of IT and information sharing in the healthcare industry. As we have seen, all the players in the game agree it is time to bring healthcare forward into the information technology era, and we have also seen that the crux of the task is the development and widespread use of standards and the collection and transmission of data. Without these standards, all the diligence in the world in collecting the data and all the newest technology for storing and transmitting that data will be worthless unless the information that is collected is interoperable. If we can achieve this,

we will not only make great strides in improving the delivery of healthcare, but also in improving the coordination among private healthcare providers, public health officials, and emergency responders in the event of a biological emergency, be it terror-related or a natural disaster. In either case, improved communication and coordination are vital to lead to quicker identification, containment, and response, and in these cases time saves lives.

I want to thank everyone for their participation and staff for their hard work inputting this together. And, with that, the subcommittee stands adjourned.

[Whereupon, at 5 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional information submitted for the hearing record follows:]

U.S. House of Representatives
Committee on Government Reform
Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census
Hearing on "Health Informatics"
July 14, 2004
Questions for the Record for Dr. Claire Broome

Chairman Adam Putnam

Over 85% of our national medical response capacity is within the private sector. The CDC has established various systems to support the exchange of important health information between the private sector and the public health sector, including the Laboratory Response Network to respond to biological and chemical terrorist attacks and emerging infectious diseases. To be effective, Network members need to implement certain uniform data and medical terminology standards defined by the CDC, such as SNOMED CT (the Systemized Nomenclature of Medicine for Clinical Terms, an electronic medical vocabulary of more than 436,000 terms). It has been reported that since the federal government bought the license to SNOMED, it has become the national standard and is available for free to anybody who wishes to use it. The Subcommittee is concerned, however, that not enough is being done to expedite implementation of these standards for all members of the Network, including hospital laboratories. For example, the Florida pathologist who isolated the first case of anthrax in our country in 2001 works in a private hospital lab. Clearly, it is critical that health information flows not only from one public health entity to another but also from private sector health entities to state departments of health and up to the CDC.

Secretary Tommy Thompson recently announced that the federal government has made SNOMED widely available at no cost through HHS.

Question: What is the CDC doing and what would you recommend be done to assure that all partners in your Networks adopt common standards, such as SNOMED, so we can have reliable, consistent communication sharing?

Response: CDC agrees with the premise that preparedness is enhanced when electronic information on public health relevant diagnoses flows seamlessly from clinical diagnostic laboratories (private and public) to public health entities. To achieve this, (the ability for all sending entities to transmit data and know that the receiving entity can receive, read and utilize the data) the data must, at some point during transmission, be mapped to a set of common standards, which includes, but is not limited to, SNOMED standards.

CDC and our partners, both state and large multi-jurisdictional clinical diagnostic laboratories (which perform approximately 40% of diagnostic testing in the country), are currently in the process of implementing a system that utilizes common data standards. The initial implementation target group includes all 50 states and the big three multi-jurisdictional labs. By the end of the calendar year, implementation of the standards in all three labs and over half the states will be complete.

The incorporation of data standards such as SNOMED in additional private laboratories is planned, but requires substantial technical resources to accomplish.

Advancing Excellence

Statement to
Subcommittee on Technology, Information Policy
Intergovernmental Relations and the Census,
Committee on Government Reform
U.S. House of Representatives

Hearing on
Public Health
Information Sharing

July 14, 2004

Submitted by
College of American Pathologists

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Statement Submitted
By
The College of American Pathologists

Hearing on
Public Health
Information Sharing

Subcommittee on Technology, Information Policy
Intergovernmental Relations and the Census,
Committee on Government Reform
U.S. House of Representatives

July 14, 2004

The College of American Pathologists (CAP) is pleased to submit this statement for the record of the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census hearing on information sharing and the public health. The College is a medical specialty society representing more than 16,000 board-certified physicians who practice clinical or anatomic pathology, or both, in community hospitals, independent clinical laboratories, academic medical centers and federal and state health facilities. The CAP thanks subcommittee Chair Adam Putnam and the subcommittee's members for their interest in strengthening our nation's defenses to bioterrorism and other public health threats. The College believes the federal government can and must take a leadership role in health informatics standards and we applaud the appointment of a Health Information Technology Coordinator to oversee work in this area.

The CAP agrees unequivocally with the subcommittee's premise that the speed and accuracy with which physicians and laboratories reach correct diagnoses and report their findings to public health authorities directly affects outcomes in a bio-emergency or other threat to the public health. A critical component of responding to a public health emergency is the ability for all responders—federal, state and local governments and private entities—to communicate quickly and efficiently. Disease surveillance systems at all levels must speak a common language.

It is for these reasons and others that the College has long advocated adoption of its Systematized Nomenclature of Medicine Clinical Terminology (SNOMED CT) as a standard for electronic health data. Aside from its clear benefits to routine medical recordkeeping and electronic exchange of patient data, SNOMED can play a crucial role in tracking emerging public health threats and strengthening our nation's medical response capability for man-made or natural disasters.

SNOMED CT is the most comprehensive international and multilingual clinical reference terminology available. Its unparalleled scope delivers to the entire health care community unprecedented uniformity for medical communications that spans languages, clinical specialties and geographic borders. SNOMED CT contains approximately 325,000 concepts linked to

clinical knowledge to enable accurate recording of data without ambiguity. The terminology's content also includes more than 800,000 descriptions or synonyms relating to clinical concepts, as well as more than 950,000 links, known as semantic relationships, between clinical concepts. This structure ensures the proper relationships of diseases, treatments, etiologies, clinical findings, therapies, procedures and outcomes.

The value of SNOMED to disaster preparedness and response lies in the power it gives health authorities, through the aggregation of shared data, to identify exposures to biological agents or hazardous chemicals over a broad geographic area and design effective treatment plans.

The federal government, recognizing the value of SNOMED, has taken important steps in the past year to support broad use of the nomenclature. In July 2003, the National Library of Medicine and the College agreed to make SNOMED CT publicly available at no cost through the NLM Unified Medical Language System Metathesaurus. Also, the Centers for Disease Control and Prevention (CDC) Public Health Information Network identified SNOMED CT as "a necessary component of the reliable interchange of data."

In May of this year, Health and Human Services Secretary Tommy Thompson said his department and other federal agencies will adopt 15 standards, including SNOMED, that President Bush's Consolidated Health Informatics initiative has recommended for the electronic exchange of clinical health information across the federal government.

The need for strong federal support of SNOMED cannot be understated. To realize the value that SNOMED can deliver, it must first become part of hospital information systems. While many public and private entities—the Department of Veterans Affairs, the Special Operations Forces of the Department of Defense, the CDC, Kaiser Permanente—now use SNOMED, its full benefits will not be realized until adoption approaches the national level. How quickly that occurs depends partly on the federal government's commitment to providing incentives and resources for SNOMED's use.

The College was particularly pleased last month to see the President's Information Technology Advisory Committee (PITAC) recommend that the federal government provide financial incentives to encourage full integration of SNOMED CT into the electronic health record. Also in its final report, "Revolutionizing Health Care Through Information Technology," the PITAC recommended that the government make "freely available" standard, automated mapping of SNOMED-CT to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).

The CAP thanks the subcommittee for the opportunity to present its views on this important issue and offers its support and continued assistance as Congress considers ways to safeguard all Americans from bioterrorism and other public health threats.

Statement for the Record

Submitted by

ARMA International

To the

Subcommittee on Technology, Information Policy,
Intergovernmental Relations and the Census
Committee on Government Reform
U.S. House of Representatives
Washington, DC

Regarding its

Oversight Hearing on
"Health Informatics: What is the prescription for success in intergovernmental information sharing and emergency response?"

July 14, 2004

About ARMA International

Established in 1956, ARMA International (ARMA) is the non-profit membership organization for the information management profession. The 10,000 members of ARMA include records and information managers, imaging specialists, archivists, hospital administrators, legal administrators, librarians, and educators. ARMA provides education, research, and networking opportunities to information management professionals and provides guidance to policy makers on issues involving information management.

ARMA serves as a recognized standards developer for the American National Standards Institute (ANSI) towards the development of records and information management standards. ARMA is a charter member of the information and documentation subcommittee of the International Organization for Standardization (ISO) towards the development of its records management standards.[1]

ARMA International supports public policy that recognizes the importance of:

- Increasing the efficiency of information management systems
- Reducing compliance burdens placed by the government on the public
- Supporting the flow of information
- Protecting personal privacy, intellectual property rights, and proprietary information
- Preserving vital records and the information resources that document our heritage
- Promoting the further development and use of information technology and the information infrastructure

Why Information Management is Important for a Health Information System

The President has called for the creation of an electronic records data base for all Americans within 10 years. His vision is intended to develop a nationwide health information technology infrastructure to ensure that appropriate information is available to care givers at any time and any place of care – resulting in improved health care. The President has established a National Coordinator for Health Information Technology within the Department of Health and Human Services to drive the adoption of health information technology and to centralize the Federal Government's efforts in pursuit of this goal, including the development of standards of interoperability, formats and vocabulary. The Department's Consolidated Health Informatics initiative is one of the President's 24 E-Government initiatives.

[1] ARMA was a charter member of ISO Technical Committee ISO/TC 46, Information and documentation, Subcommittee SC 11, Archives/records management and participates in the development of ISO standards on records management. In its updated strategic plan, the National Archives and Records Administration indicates, as a specific strategy, that it will base its approach to records management on the ISO Records Management Standard 15489. See "Ready Access to Essential Evidence: The Strategic Plan of the National Archives and Records Administration (1997-2008) (Revised 2003)".

ARMA urges the Subcommittee and Congress to ensure that these initiatives include the development and implementation of appropriate information management policies and procedures. The issues of safeguards and access cannot be fully addressed by the adoption of technology alone – as important as technology will be in the effort to create a nationwide health information program. Effectively implementing safeguards and rules of access will also require the adoption and implementation of an appropriate information management program – one that will identify procedures and protocols regarding the creation and preservation of information, document access and use of the information, and address the authenticity of data in records of health information. An appropriate information management program will also assign responsibility for managing health information records and address other core principles of information management such as training, auditing, and retention and disposition.

Information is among the most valuable commodities of any organization. In the case of organizations that possess, process, and use sensitive consumer information, this information is a part of the organization's strategic business plan. The management of information is also a mission critical function of Federal and State agencies. Management of records of information that contain personal, non-public information such as health information require particular attention to the policies and procedures that establish safeguards against unauthorized access and authenticate and document the use of such information. Specific policies and procedures for the management of this information and the assurance of effective safeguards are essential elements of an organization's information management program.

Electronic records management has emerged as a particular challenge. According to a survey of 2,200 records managers conducted by ARMA and AIIM International (the Association for Information and Image Management), electronic records policies are nonexistent in almost half of U.S. companies, despite the serious issues raised about corporate records keeping over the past two years. Forty-seven percent (47%) of companies reported that they do not include electronic records in their retention and destruction schedules. Forty-six percent (46%) of companies reported having no system for placing holds on records in the event of pending litigation or a regulatory investigation – leaving open the possibility that records critical to a legal matter could be destroyed.[2]

With passage of the E-Government Act of 2002, Congress established the Intergovernmental Committee on Government Information (ICGI) to establish and share effective practices regarding the access, dissemination and retention of government information.[3] The ICGI established the Electronic Records Policy Working Group (ERPWG) as one of three initial working groups, and the ERPWG has developed a draft

[2] See http://www.merresource.com/whitepapers/survey.htm
[3] See Section 207 of the E-Government Act of 2002 (Pub. Law 107-347). For general information on the ICGI, see http://www.cio.gov/documents/ICGI.html.

report identifying barriers to effective management of government information on the Internet and other electronic records.[4] In its draft report, the ERPWG notes the following –

> The Federal Government faces ever increasing barriers to the effective management of Government information on the Internet and other electronic records. Changes in how the Government works, especially as Federal agencies move towards automated processes, have led to barriers that undermine the Government's ability to manage records and information as important business assets.[5]

The barriers to effective information management identified in the draft report are –

- "Records and information are not managed as agency business assets."
- Records management is not viewed as critical to agency mission. It is either not incorporated into business processes, or not incorporated early enough, particularly as these processes are automated."
- "Marginal support for records management has led to a lack of training, tools, and guidance for all staff within Federal agencies."
- "The records management and information technology disciplines are poorly integrated with Federal agencies."

Recommendations for E-Records Management of a Health Information System

The movement from paper to electronic health records holds the promise for improving healthcare for Americans. Access to a patient's medical records when and where needed is an obvious benefit of the current system of unaffiliated paper records. Monetary savings as well as reduced risk of medical errors have been cited as additional benefits.

But a move to a centralized electronic records administration of American's health information raises the issues of privacy, security, and authenticity. Americans want assurances that their health information will be kept secure and accessed only by authorized care givers. In addition to the personal and private nature of health information, a centralized, electronic records system may invite potential criminal activity.[6] The establishment of a new e-records system that would allow easy access and transference of personally identifiable data between parties should be sensitive to personal privacy and grant assurance to Americans that their data will not be misused or end up in the wrong hands. Agencies and private sector entities should not have access to personally identifiable

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[4] For a draft of its report, "A Report of the ERPWG on Barriers to the Effective Management of Government Information on the Internet and Other Electronic Records" ("draft report"), see http://www.cio.gov/documents/ICGI/ERPWG_Barriers.pdf.

[5] See page 3 of the draft report of the ERPWG.

[6] Identity theft complaints continue to rise. The Federal Trade Commission reported over 400,000 complaints of identity theft logged into its ID Theft Clearinghouse as of December 2003. See prepared statement of the Federal Trade Commission on Identity Theft: Prevention and Victim Assistance, presented by Betsy Broder, Assistant Director, Division of Planning and Information, Bureau of Consumer Protection, before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce (December 15, 2003).
See http://www.ftc.gov/os/2003/12/031215idtheftestimony.pdf.

information unless it is essential to their legal and legitimate governmental or business functions. It is important that public and private sector entities identify what information is actually mission critical for the health care informatics initiative's success, who it is that actually requires access to the information, and then ensuring that the information cannot be accessed by unauthorized parties.

Concerns have also begun to emerge with health care providers sending personally identifiable information overseas for processing. This practice, known as "information offshoring" is becoming more common as health care providers seek to curb costs. Unfortunately, these countries may lack controls for the protection of personally identifiable information. Information management policies and procedures must be in place to "follow the information", applicable at all times, to provide appropriate safeguards during the life cycle and applicable retention and disposition periods of the information.

In addition to addressing the issue of privacy, a health information system must address the issue of authenticity and completeness of the information. This is a central tenet of the ISO 15489 Records Management Standard which outlines the characteristics of what constitutes a record. In addition, for emergency response scenarios, public and private sector organizations will want to ensure that there is a vital records program in place. Vital records are those records that are essential for the continuation or survival of an organization if disaster strikes.[7] Vital records are important in emergency response situations because these records have been identified and protected in advance of a catastrophic occurrence. Therefore, recovery can be based on backup copies that have been specifically created for the organization's vital records program. The records can be accessed quickly and efficiently and may assist in the recovery effort themselves and thus reduce the costs of recovery.[8]

Finally, organizations should understand that the content of electronic messages (including email messages, instant messages, and text messages) and the associated embedded or attached information may also qualify as a record. Therefore, established records management policies that follow best practices concerning retention, disposition, categorization, maintenance, or disposal may apply to electronic messages just as they apply to records in other formats.[9]

Conclusion

Information technology holds great promise in the establishment and maintenance of a more simplified and seamless health record system for Americans. ARMA believes that achieving an information system that is effective from the perspective of access, security and authenticity will require an integration and coordination of both the best practices and applications of information management and information technology. The procedures and policies for protecting records during their use cannot simply be added on at the end of a

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[7] See ANSI/ARMA 5-2003 Vital Records Program: Identifying, Managing, and Recovering Business-Critical Records.
[8] See "Vital Records Programs: Identifying, Managing and Recovering Business-Critical Records" (ANSI/ARMA 5-2003).
[9] See "Managing Electronic Messages as Records (formerly: Guideline for Managing E-mail)" (ANSI/ARMA-9-200x).

technology implementation. Information management policies and procedures are integral to the functioning of any system which stores, retrieves and protects information, and therefore must be considered during each phase from design to final implementation and system maintenance.

ARMA urges the Subcommittee to ensure that an appropriate information management regime will be included as part of the development of a nationwide health information system. Equal to the importance of the development and implementation of appropriate technology will be a set of policies and procedures for the management the health information captured by the proposed system.

Respectfully submitted,

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