Alliance for Health Reform
Health Information Technology: Here, Now and Tomorrow
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JOHN IGLEHART: …It's only taken me 35 years to sit in this chair to be called Mr. Chairman, but who's counting? Anyway, I want to thank you for coming. I also want to acknowledge the organizations that supported the publication of this issue. Without this kind of support, *Health Affairs* would have been a dead duck many years ago; but the four organizations are the Agency for Healthcare, Research, and Quality; the California Healthcare Foundation; the Kaiser Permanente Medical Care Program; and the Marco [misspelled?] Foundation; and I thank all of them. We had planned to begin with David Brailer because he has to leave at 1:00 for another activity but since he's not arrived yet, we're going to begin with Carolyn Clancy, the Director of ARC. Each speaker will speak for 10 minutes and will follow that with questions. So, obviously, the bulk of the time here will be left to the dialogue between you as the participants and our panelists. So, with that, Carolyn, I'll turn it over to you. Thank you.

CAROLYN CLANCY, M.D.: Thank you. Good afternoon. I certainly want to salute you and your colleagues, John, for putting together a fabulous issue. For all of you who are dealing with the policy ramifications of health information technology, I can't think of a better resource to have so I can envision many dog-eared copies being around the Hill. As I think Dr. Brailer, who's just coming in now will probably

emphasize, if we didn't know it already, the hurricane Katrina has made it very clear, there's really no substitute for a medical record that can follow a patient wherever that patient might be. It's not a new idea. Mom's have been carrying their children's vaccination record in their wallets for years, speaking of following the patient. But what's really needed is an interoperable electronic health record that's complete and up to date that's available when and where it's needed. As this event unfolded, it turns out that one of the grants that we are funding in a rural area just west of New Orleans, this is a grant that's helping to implement and install an electronic health record in 10 critical care access hospitals in their emergency departments. Two of the hospitals are in the affected area and they've been able to be enormously helpful in their local communities providing up-to-date information to treating physicians and other physicians. You contrast that with another colleague whose community health center at the Alabama border, also in the affected area, is under about five feet of water and they've been trying desperately to dry-out paper patient records on the roof of their clinic in the sun, a pretty unforgiving enterprise. But even before the tragic events recently, we've known the benefits of health IT. The hurricane and its aftermath have simply made it very stark and I expect that David will have more to say about that.

And, by the way, even while we're waiting to achieve

interoperable records, we all might want to consider developing our own personal health record online as part of our emergency preparedness. For many of us, it could be at least as important as the water, the flashlight, and the Power Bar. And, of course, it's not just for emergencies. Health IT is important because it's a key to better quality of healthcare in many different ways as well as more cost effective care.

Today, in Washington, we have a broad commitment to Health IT. I want to talk about the role that ARC is playing in particular, looking at the challenges that our doctors, nurses, and hospitals face and learning from them and with them. Health IT can be many things. Easy to get there is not one of them. We're talking about hard work, difficult changes, and learning as we go, if we're truly to realize the benefits and not just digitize the problems we already have in healthcare. We're talking, in other words, about a generation of learning compressed into a few years. One part of that work is laying the technical groundwork. Secretary Leavitt has taken on that job as a personal priority. He's sorted out the tasks, convening stakeholders, and providing the critical leadership. At the same time, ARC is supporting a wide-ranging program to help healthcare providers build capacity to use Health IT, to learn with these providers what works best, and to measure the added value.

Our goal, then, is to help the people who will use

Health IT, or the health information highway and ensure the end product will serve the real needs of the patients and providers. We all know how much there is to be done. The President’s goal of electronic health records for Americans is ambitious and in the current issue of health affairs, there’s a new evidence of the adoption gap between larger and smaller practices that needs to be overcome.

This is a survey under the Data Watch Section supported by ARC and carried out by the Medical Group Management Association, the largest of its kind so far looking at group practices. It finds that just 14.1 percent of all group practices are using electronic health records now and only 11.5 percent have fully implemented them. Most large practices have plans for implementation but almost half of the smaller practices, that is five or fewer physicians, have no immediate plans for using electronic health records. The work that’s being led by Secretary Leavitt and David Brailer will help change that picture. It will provide the essential technical base but, at the same time, we need to prepare the human base and that’s the heart of ARC’s Health IT initiative, a real world laboratory looking at Health IT in real clinical settings and delivering findings based on day-to-day experience. In the same way that the technical groundwork must come from a collaboration among stakeholders, our work is a collaboration of learning and growing with healthcare professionals. The

truth is that even in the best of circumstances, the transition to Health IT is a demanding task for providers. A colleague, who's a clinician at the University of Pennsylvania, told me for 6 months, she felt really stupid – every day seeing patients. Eighteen months later, she's amazed by how much her practice has been transformed but that six months was no picnic. So Health IT promises to be transforming but transformation means fundamental change. It's easy to talk about reengineering healthcare settings until you realize that many of these settings have never been engineered to begin with. So we're talking about a lot of learning. ARC's initiative is about fostering this learning and sharing it in a strategic way as quickly as possible. It's really about the marriage of Health IT processes with the way the work is done in healthcare today and the way that it can be done better tomorrow. One of our grantees – and many of them tell us that for the provider, this transition is one part technology and 2 parts culture and work process change. So, ARC's initiative is helping these providers put HIT in place in new settings and then it asks how do these systems perform in the real working environment, how much do they enhance safety and quality, and how can they be improved. Our program is a true cross-section. Many of our grantees, particularly those providing care in rural and underserved areas are using HIT for the first time. Others are building on experience to help us all move forward.

Some are large scale statewide projects, others are looking at very specific applications and as we learn these answers together, we're sharing them. A very important element of our initiative is our National Resource Center for Health IT. During our first year, the technical assistance and web portal that supports peer-to-peer learning has been a resource for our grantees. In recent months, we've expanded access to the nation's community health centers and rural hospitals, even as we continue building and we're increasingly providing technical assistance to emerging state and local initiatives who can benefit from the tools in learning were developed through our formal programs. Next year, we plan to make the resource center publicly available, open to everyone who can benefit from large systems to solo providers so that across the country, we can collectively smarter faster by learning how to use Health IT effectively to provide safe, high-quality healthcare. The quality challenges that we face simply don't allow us to learn from others from common goals. If I leave you with one message today, it should be this one. Health IT represents a seat change for providers. To realize the benefits, we need to learn from them and with them as we move forward and our initiative is helping to do that job and if there's room for one more take away message, it's this. Health IT is about improving healthcare and health, helping physicians and nurses and consumers themselves ensure better safety and quality of

healthcare. In Health IT, better quality starts with making patient information available when and where it's needed. That gives clinicians the information they need to provide the right treatment without delay. Better quality also means providing information on the best treatment choices for patients. This could help ensure that the physicians and the nurses employ proven best practices. So grantees, like the California Rural Indian Health Board are showing how treatment information can be brought to the bedside in multiple locations. Of course, as many of you know, better quality means preventing medical errors and that's a predominant theme in our initiative. So, at Duke University, they're building and assessing a computerized system for early detection of adverse drug events. This and other investments will substantially enhance departmental efforts to improve drug safety. Better quality also means coordinating the patient's care by giving different providers access to the same accurate information. Last year, we found that 69 percent of the public reported that coordination of information flow among their healthcare professionals was a problem and 1/3 said that in response, they had developed their own medical records to make sure that this information was accurate. Better quality can also come by extending medical resources and expertise, especially for underserved areas. So, at the University of Tennessee, they're developing a telehealth system to deliver cancer services in one of the nation's

poorest areas. Better quality also comes from measuring performance and Health IT systems are going to be a critical part for comparing providers, spurring improvements, and giving consumers better choices. At Brigham and Women's Hospital, one of our grants is supporting an individualized feedback system, a dashboard, to show physicians how they're doing and some close to real time.

We're also happy to be collaborating with the Centers for Medicare and Medicaid Services and many of their demonstrations that use HIT to improve quality, in particular, we're joining with CMS in a $7 million dollar pilot project to ensure that new E-prescribing standards for Medicare will work as intended and improve patient safety and that initiative is just available today. I want to just finish with a broader view of quality and Health IT. In truth, this is part of a much larger quality movement, maybe even a revolution, certainly a huge opportunity that's before us today. It's a movement to better identify the quality of care, better delivery of quality of care, and actually save money because when we deliver quality care – the right care at the right time for the individual patients' needs every time, we're delivering cost effective care. Today, we see the possibility of fundamental changes across our healthcare system based on quality. We're designing ways to design payment and quality and we're building the knowledge base of what constitutes best quality care. All

of this represents the opportunity to turn wasted healthcare spending into productive spending using quality and demonstrable performances of [Inaudible] and Health IT is a central tool to get us there. As we digitalize information, it will be increasingly possible to carry out rapid research to determine which treatments work best with what risks and for which patients. Increasingly, we'll be able to define measure and reward quality. At ARC, we've recently launched a new program called Effective Healthcare. This is section 1013 in the Medicare Modernization Act, to help identify what treatments work best for specific health conditions and the initial results will be coming in the next few weeks. An important part of this program is a new investment to develop better methods for taking advantage of the availability of electronic clinical data as well as Medicare part D claims to enhance drug safety and safe, effective use of interventions and Health IT, of course, will be a primary vehicle for disseminating that information to the point of care as rapidly as possible.

So, I said we have a quality revolution. Actually, I think we have three all at once. One is a biomedical revolution where radically new and successful therapies become available and all of us have more choices and more options for both diagnosis and treatments. A quality revolution that will help us put the most effective treatments to work and a third

revolution where individuals are empowered with information in the capacity they need to achieve high quality healthcare and high quality health results. That's where it should be headed and to borrow from Secretary Leavitt, Health IT is the big gear that can enable these changes. It's important to move forward aggressively and it's also important to listen and learn with our providers as we implement Health IT and it's important to understand that if we do it right, Health IT can be a critical part of a broad transformation to better quality of care for all of us. Thank you.

JOHN IGLEHART: Thank you, Carolyn. We'll move right on to Dr. David Brailer who's the National Coordinator for Health IT in the executive branch and we'll follow his presentation with questions to Dr. Brailer because he has to leave before the end of this symposium. So, David.

DAVID BRAILER, M.D., Ph.D.: Great. Thanks, John and certainly thanks for the opportunity to join you on such a very important day in Health Information Technology and also thanks for the chance to see how the world looks from another branch of government. Feels good. I do apologize that I can't stay but after a week of pilot testing, today is the rollout of Katrina Health, which is a website that was created that has prescription data compiled for 80 percent of the Katrina evacuees. These are available only to clinicians who are working with the evacuees. It's a joint effort that came

together in less than a week from the Medicaid plans in the states, their contractors, a variety of companies that support prescription drug claims management, and retail drugs management in philanthropies with federal government playing really a minor role as a catalyst and a provoker of interest and this is a committee of the willing and trying to do something and show how Health IT can contribute its own role. So, we've got work to do this afternoon and I'm sorry that I can't be here with you. I'm very glad to see the special issue. I don't know how long John and I talked about Health IT and whether it had policy relevance going back over I don't know how many years, John, but just to give you a little background, John called me about two years ago when I sold my last company and he said hey lets do something in health affairs and health IT and I got the message and I kind of thought to myself it's like nobody's interested in this. It's not the right time. I don't think anything can really come from it but about a day later, I actually got a call from an old friend, Steve Friedman, who'd become the President's economic advisor and said hey, the administration's going to do something on health IT, come and help us figure out what it is and make it work and, of course, then I called John back and said John, you know, it's a brilliant idea. You need to do this and what a great insight and I'm very glad to see this come forward and I think all of you would agree with me that this issue is just a

tour de force. It is all the power and impact and capacity of health affairs applied to one of the least understood and most obscure and somewhat mysterious topics, health IT and obviously, the punch line here in so many words is it's not about the technology and as Carolyn said, it's about humans and the process and the way care is delivered but I would describe this as by far, the most comprehensive set of conceptual thinking, ideas, analysis, and recommendations since at least the e-mail I received last week from Newt Gingrich.

You'll hear much, today, from the experts. I used to be an expert but now that I'm in the executive branch, I'm just a paper pusher but I wanted to make two overarching points, try to cut through all the detail and tell you what this meant to me. These points might actually be particularly helpful to some of you who, like me, have been reduced to a concept of reading, which is particularly something this long, is often more like reviewing talking points or having someone whisper in your ear as you walk into a room so you become an instant expert on the topic and I didn't realize, by the way, how far I was gone in terms of my lack of ability to read anything until I was with my 5-year old son and I know many of you know that children become the mirrors of our worst traits and I told him we should read some books and he said, no thanks, just brief me on them.

So, what are the takeaways? What is – that's a true story. What are the takeaways here and I got two and there are

many, many others but I just want to hit these two. First, I think if nothing else, this issue shows how absolutely inevitable and how impossible to return to status quo, Health IT is, not because of what's happened in the last 2 years but because of the buildup that's occurred over the last 30. A massive amount of benefit, the economic proposition, the social, cultural, professional issues that underlay this change, the evidence that surrounds us from other industries – it's all there and it's put in a very good – a good way to think about it. If you just look, for example, the economic case that Rand has presented and their really remarkable paper, which at the macroeconomic level, tries to understand how do we define the benefits and the cost effective Health IT, it came remarkably close in its estimates to the recently published Harvard paper, which was a microeconomic model and for those of us that have spent a lot of time thinking about economics, that is very good news because it helps us maybe not make an absolute bulletproof case. It helps us understand that there's something there that we need to go after and I thought that was great validation and I'm sorry that I can't stay to listen to Dick talk about the paper because I think it's just very well done.

Secondly though, and I think this is really the rub, if Health IT is inevitable, we as a nation can get it wrong and if we don't act towards certain ends, we will get it wrong. The

punch line here is doctors using computers and software is not the kinds of things we want to see happen in the transformation of the industry. For example, the adoption gap that Carolyn talked about could become persistent if we don't have policies and mechanisms to level the playing field, to recognize that IT adoption is not just an economic feat, it's a professional change, it's a human change and those that have access to these types of tools will have a persistent improvement in health status and those that don't may not. Those systems that can use these tools have a strategic leg up in the market and those that can't may not. Now, we might deem that a good value. I don't. I want a competitive healthcare marketplace and I don't want it to compete on health status. Even if they're adopted, EHRs are not created equal and I think this is one of the key points that came out of the Rand paper – the benefits that we seek from electronic health records come from the ability for them to improve privacy and security, to protect consumers and their health information, to use standard space communication to allow data to be portable so patients can't be trapped with a certain health system, and to use decision support to be able to improve health status and prevention and reduce errors.

The systems that Rand calls EHRS, which we called certified and which within two weeks we will let out a contract for our certification advisor to the federal government who will begin developing the criteria for certification and

recommending them to our new health information community. Certification, we believe, is the pathway towards health status, privacy, and economic benefit. Everything else, as I said, is just software and computers. We can't take a laissez faire approach and just encourage physicians to just buy software and computers without also enabling them to change their practices and to put this into place. This is one of the core issues of how we, as a nation, go about doing this and zip those all across the U.S. The core of our agenda, therefore, is not to make Health IT. It is to make it happen right, fast and with the least transformation or dislocation of the industry that's painful, widespread, secure, level playing field, consumer-based. I think that those of you here today are almost definitely self-selected to be the leaders who are going to make this happen, whether it's in the practice, the theory, or the policy of Health IT and I think you're going to make a difference between getting it right and getting it wrong so I just hope that as you listen today and you read this issue or read this briefings on it or however you learn these days that you'll keep in mind that this is, again, not about the technology and we have a chance to do something profoundly right and its our effort in our office and I know Secretary Leavitt has the same focus as I, Carolyn does, Mark McClellan, many of us in the government to really take advantage of this chance and make this something that's a very positive change so

I'm very glad to be with you. I'm sorry that I can't stay and I also apologize that I have about 1 minute left before I've got to run out the door, John, so thank you.

JOHN IGLEHART: All right. We will take one question and I'll ask it [LAUGHING]. It seemed to me as I reviewed these papers after we published it and I pointed this out in my editor's note is that a drumbeat runs through many of these papers that call for a greater level of federal government leadership in terms of the pursuit of IT. I know that's not a drumbeat that's unfamiliar to you, David, but how do you, in general, respond to that kind of suggestion?

DAVID BRAILER, M.D., Ph.D.: Well, as the guy who is supposed to be beating the drum, I certainly think the federal government does have an obligation and is taking up that obligation. In my personal view, and as I think our policies and plans express, the government itself is part of the market failure in terms of how we pay for healthcare and how we create standards and quality and that's a very difficult challenge to move forward but traditionally market failures like Health IT adoption or quality improvement are roles that the government plays. So, the question to me is not the government being involved. We're here. We've got to do this. The question is, what's the modality? Now, on the one hand, we have, I think what I would call traditional health social agency thinking that says lets create an agency. Let's put billions of dollars

in it that’s taxpayer financed and let’s buy Health IT and lets put it in place. That’s written and there are some calls for that and it’s a solution. My personal view is it’s a very inefficient solution that could be quite rigid and a very technically evolving area. On the other hand, there is kind of a very kind of archconservative view that says lets let the market be very hands off and very laissez faire and no steering, no technology policy, no direction, and lets let the fundamental forces move forward. I don’t think that’s possible also because the market forces are blunted, largely that the demand forces for taking this up. In the middle, is where we play and our focus, on us being a good purchaser to mean the office of personnel management will make sure the health plans for self services to it for federal employees are putting in place, policies that encourage IT adoption that CMS, VA, DOD, both through their care delivery but also through their procurement of services through the private market are encouraging standards and are certified systems and interoperability in other policies where we act in concert with the private sectors is how we choose to act. I will tell you I have a good confidence that it will succeed. I don’t have absolute confidence but I do believe this, it’s the best solution. It’ll lead to the most organic evolutionary process, it leads to no lockdown of certain standards, and it doesn’t create a mandate, if you would, that will force many people

into something where their actions could be acquiring technology without the concomitant changes. It's in that narrow valley where we live, John, and I think we've got a lot to do but I appreciate very much how people in Capitol Hill and people in the non-government organizations have come along and really thought about the opportunity here.

JOHN IGLEHART: Thank you David for taking the time. We appreciate it…

DAVID BRAILER, M.D., Ph.D.: Thank you, John and I apologize John, so much that I can't stay.

JOHN IGLEHART: Okay.

DAVID BRAILER, M.D., Ph.D.: Thanks. It's good seeing you.

JOHN IGLEHART: Good. We will move right on to our next presenter, George Halvorson, who's the Chief Executive Officer of the Kaiser Foundation Health Plan and one of the real pioneers in the private sector in the pursuit of IT. George?

GEORGE HALVORSON: I would echo one comment that Dr. Brailer and I'm a C-SPAN junkie so it's fun to be sitting at this panel and seeing the technology behind the [Inaudible]. We have little clocks up here that tell us how much time we have left and I could probably use that in a lot of setting. I shouldn't have said that. He just reset my clock. It's great to be here. I think this is the right topic at the right time. I think that this issue of health affairs is going to have a very

significant impact on American healthcare policy because it brings together so much of thinking in such an articulate and well-described way. My own perspective on this is that I believe that reforming the healthcare delivery system by computerizing it is absolutely essential if we're actually going to reform healthcare in America. I don't think we can reform healthcare in America to any significant degree without that tool. The lead slide here says systematic access to data is the essential foundation for healthcare reform. Let me make a couple of comments about that.

In the meantime, until we get healthcare reform, healthcare costs continue to explode, employers can't afford the premium increases, government can't afford the cost increases, the number of people covered is shrinking and the number of people who are inadequately covered is growing. We're facing all kinds of pressure in the system - economic pressure and basically something has to give. I'm not going to spend time on a couple of points that I was going to talk about and jump into the more direct point and basically say that the information that's coming to us from Rand, from the Institute of Medicine, from the Weinberg [misspelled?] studies, other important studies are telling us that there is a great inconsistency and inadequacy in American healthcare. Healthcare quality is inconsistent, often idiosyncratic, and too often dangerous. One of the studies I like to cite is 135 doctors all

given the same patient who came up with 82 different treatments. Some of them went to medical school last month, some went five years ago, some went 20 years ago. They may or may not have read an article. They may or may not have gone to a seminar but there is a great inconsistency that happens in American healthcare. People are dying, people are getting inadequate care, and the cost of care is too high. We set very low standards for ourselves in healthcare compared to any other industry and when you look at the consequences, something as basic as diabetes – and the Rand study indicated that more than half of America's diabetics receive inadequate care. That's the fastest growing disease in America. That's the number one cause of blindness, number one cause of amputations, number one cause of kidney failure, number one co-morbidity cause from heart disease, 25 percent of Medicare dollars are spent on diabetes, and 25 percent of America's diabetics receive inadequate care. There are similar numbers for asthma, similar numbers for heart disease, we need to face that problem and I'll come back to it in a second.

The second point we need to think about is who is actually using healthcare dollars and one of the things that we know and this is a fact that needs to be understood is that there is not a uniform distribution of usage for healthcare dollars. One percent of the people use 30 percent of the dollars. That's one end of the continuum. On the other end, 20

percent of the people use no healthcare resources at all in a given year. Seventy percent of the people use 10 percent of the dollars. So we have a focus of use on a small number of people who consume the overwhelming majority of the healthcare dollars.

If we think about that systematically, basically it gives us an opportunity to think about what we might do to deal with that distribution of expense. In the opportunities are systematic, high leverage interventions to keep people from migrating into that high-cost area. We need to identify who they are and we need to know what to do to keep them from migrating into that expensive area, and we need systematic best care for the people who are in that high-cost area. And right now, half of America's heart attack victims get inadequate follow-up care and have a disproportionate number of second heart attacks. So we are failing the one percent and we are doing an inadequate job of intercepting and having interventions with the 10-20 percent that are migrating in that direction.

If you look at this chart again, where are the opportunities? The opportunities are with the people, who are extending all of the care to give them best care, and we do that inconsistently and the opportunities are to intercept the people moving in that direction. We can't do either one of those without a system. We can't do either one of those

without computerized data that identifies for us who those people are and what best care is for the condition.

So what's possible if we actually have the data? We can actually apply continuous quality improvement technology to healthcare, we can do systematic quality improvement and we can actually move in the direction of taking Six Sigma sorts of standards and applying them to healthcare. The rest of industry in America has committed to systematic quality improvement and frankly can't understand why healthcare hasn't gone there as well. If you look at Six Sigma standards, it's a couple of errors per million units. Healthcare goal standard if someone's a 90 percent compliance with a given standard, we give them national awards. That's 100,000 errors per million. The rest of industry is focusing on a couple errors; we do 100,000.

The question is how do the other industries get there? How do they actually achieve Six Sigma? It's not because there are well-intentioned people working really hard. We've got a lot of that in healthcare. It's because they are doing it systematically, not just working harder.

Let's take a really quick look at GE. GE is the best in the country at Six Sigma. How do they do it? They have a four-step process. The four steps—MAIC steps—are measure, analyze, improve and control. They teach thousands of employees how to go through that process. They have black

belts in Six Sigma who know how to do that process and what do they process? Data. What does healthcare lack? Data.

GE could not do Six Sigma without data. GE could not do steps two, three and four without data. Healthcare lacks data. Healthcare needs data, superior, available, insistent, apprehensive data, and the only possible source of that data is the computer. Until we have that data, we can't do systematic quality improvement on any reasonable scale and we can't create a value based marketplace where consumers can make decisions about their healthcare providers based on their actual performance.

The actual performance requires data. In healthcare, we don't have data. Where do we get data in healthcare now? We get data in healthcare from a paper medical record – individual pieces of paper that are used by each doctor. A patient with four doctors has four medical records. They are on paper. They are stored in file drawers. They are basically too often unavailable. They are incomplete. They are often illegible. They are non-interactive. They don't interact with each other and they don't interact with the doctor. They don't remind the doctor to do the right thing at the right time in the right way, and the whole process is basically obsolete. In this day and age, it's a total anachronism.

What's needed is a computerized physician support tool – an electronic medical record that also has care support

capability. Just having the medical record is not enough, you need reminders in the medical record to remind the doctor to do the right thing. There is absolutely no other way to achieve anything resembling Six Sigma in healthcare. Doctors can't keep up with 20,000 medical journals. We know right now it takes five years for half the doctors in a given profession to start using a new procedure, new approach, once it's proven scientifically to be the best approach. No sense of accountability.

So what can result from an AMR? Massive administrative savings. If we can make the whole process electronic, we can strip out of the system all of those insurance administrative costs that are so burdensome to the system. Everything can be done electronically. Far better healthcare research – rather than having clinical trials that have 200 people studied for two years, as a snapshot, we can have hundreds of thousands of people on clinical trials that are perpetual going in every day.

We discovered the Vioxx problem at Kaiser Permanente by doing a scan of our data of our patients that were on Vioxx and identified the heart attack problem. That's the kind of thing that needs to be done all the time with the entire spectrum of healthcare needs.

Our pilot studies, what happens when you actually do that and give physicians computerized support? In Ohio, we had

a 30 percent drop in fatalities from heart disease; Southern California, 31 percent drop in fatalities from kidney failure; Colorado, just by having the computer checked to see what prescriptions patients when taking or the patients were about to go into surgery and the interacting with the doctor, we had a 79 percent reduction of bleeding complications. The opportunities in healthcare are immense and those opportunities will not happen without a system.

In conclusion, let me say it's time to wire US healthcare. We have made massive commitments to infrastructure in this country in the past. The GI Bill gave us an educated workforce; the Highway Act gave us interstate highways that allow interstate commerce, rural affrication made rural America abatable. Hill-Burton put hospital healthcare everywhere.

The government has in the past taken a policy position in favor of national infrastructure agendas. We need that now in healthcare. We need the agenda. Diabetics, as I said, spend 25 percent of the total cost of Medicare, a 10 percent reduction in the cost for diabetics, which is an easily attainable number, but by itself fund that agenda.

Let's have a new agenda. Let's think systems. Let's know exactly what's happening in healthcare. Let's understand performance. Let's understand outcomes. Let's understand efficacy and let's systematically improve healthcare performance.

And I close by saying computerized data is the obvious next step in healthcare reform and without it, we are reduced to doing incremental improvement in individual local situations on a one-off basis that will not give us either the healthcare delivery or the healthcare marketplace we want.

JOHN INGLEHART: Thank you George. We will move on to Richard Hillestad, our lead author on our lead paper from RAND. He is a professor of policy analysis. Richard.

RICHARD HILLESTAD, Ph.D.: Thank you. I have to learn how to run this technology yet. One of the interesting things and the fun things about learning about health information technologies is it gives something for you to talk to your doctor about other than your health. You should try it when you go into your physician's office and ask them, "Why don't you have an electronic medical record?" You'd be amazed at the number of different kinds of responses that you get to that. "No way in hell am I ever going to have one of these things." "I'd really like to have it. Can we be a test site for your study so that maybe you can help us pay for it" and things like that. So try it with your own physicians.

What I am going to do here is take just a short period of time and try to give you some of the highlights of a study that we've had going on for about two and a half years at RAND and completed it this spring.

Let me first put it in context. Let me give you the

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bottom line. What we show in our study is that if you move out into a future in which healthcare has widely adopted and embraced health information technology in the form of an electronic medical records system, there is large potential savings. This is the average that we calculated – about 77 billion dollars per year just in efficiency savings alone. The costs are large but relatively modest compared to that. This is after the adoption and after some period of time. I will show you what they look like during the adoption period and it's no that bad there either.

But here, just taking the efficiency changes, we see about a seven to one benefit to cost, which most businesses would really like. The problem is – and we will come to this – that this is not a return on investment for a hospital or for a doctor. This is the country's return on investment and it goes to all kinds of different stakeholders. And part of the problem that we'll get to at the end is somehow you have to figure out how to realign the incentives so some of this gain goes to the people that buy the systems.

We used models to also estimate health and safety benefits associated with this. One of the reporters I talked to asked me, "What did I forge to ask you? What's the thing at the end that you want to say?" And I said we get caught up in the dollar figures here and arguing about them and where is it going to come from and how much is it going to save. But the

real thing is the quality, the opportunity to improve quality of care.

At 1.7 trillion dollars per year for US healthcare, or about five thousand dollars per person, which is about two times the OECD average spent on healthcare, we have a very large system and it only delivers the recommended care about half the time. So I think that kind of defines an inefficient system. We basically asked in our study, “How much could electronic health records do if people embraced it?”

I think all of you kind of know what an electronic medical record is. Let me make sure. We are not just talking about converting what is on paper to an electronic form. When people talk about what an electronic medical record can do, they are talking about some of the functionalities that you can add to that record because of the fact that you have it electronic.

You can add clinical decision support that provides the physician reminders about what is the best evidence practice for a given condition. You can have patient tracking. You can track your patients and see how they are doing. You can send out reminders. The kind of things that automobile repairs do now can’t be done with the paper record system very easily. You can bring in personal health records. We have a population that its obesity rate is about twice what the OECD obesity rate is. People are not taking care of themselves. Personal health

records may be one way to get this kind of thing happening.

Computerized physician order entry is a long-term for basically that part of the system that helps the physician order and helps preven errors. It has to be tied to the electronic medical record for those safety benefits to warn of allergies, to warn of other drugs being taken and so forth. And ultimately to get some of the important health benefits, you have to connect to update systems. In the case of disease management, we want provider-to-provider interaction and heavy interaction with the patient. So you need to connect up these systems, which means also they have to be interoperable.

If you look out there right now, there are lots of different surveys and they all have their flaws, but the best we've been able to determine is that – at least at the beginning of this last year – it looked like you have an electronic medical record in some form or other in about 20-25 percent of hospitals and about 10-15 percent of physicians' offices. We are pretty early in the uptake stage. And let me say that they don't have all those functionalities and most of those systems still operate partially on paper.

By the way, all of our models and all of the work that we did is now available on RAND.org website and in fact you can pull up the models, you can pull up the data, you can make different assumptions and actually run those things. But one of the things one of our economists did was take a look at

other industries and what transformed other industries and what was the role of IT.

And what we've done here is shown three curves. The upper curve is the CMS projection of the rise in healthcare costs over, now about a 10-year period, going from about 1.7 to over four trillion dollars if it continues and if that projection is right. What would happen if we got the kind of productivity improvement from information technology that economists kind of now agree occurred in other industries, in particular, the retail wholesale industry? Look what happens if you got that continuous productivity improvement. By the end of that period of time, you are almost at one trillion dollars less in terms of your expenditure. And if you did as good as some of the better industries, the telecoms – and there's lots of reasons why telecoms are not like medicine – but if you did that good, you can see the four percent annual productivity gain that they've actually had for quite a number of years would make an enormous difference.

We also looked at what were the features of those other industries that allowed these kinds of gains to be made. There were things like large-scale to be optimized across. There were things like a value-driven competition and informed consumer and industry leader. And if you stack up those things, you discover that there's almost none of that in healthcare. So part of the problem in getting there is if

you're going to do this kind of thing, there has to be some changes and some transformation made.

Our RAND study – we had met in our study that there's relatively limited empirical evidence out there. We are at an early stage and you are not going to get, at this stage, the kind of randomized control trial evidence that you might want for drugs. One of the things you have to realize is that IT is an enabler. By itself, it does not do much of anything. In fact it can increase costs. So you have to really look for places that have made the process changes and making process changes or really transforming a care process takes a while.

What we did is we took the limited evidence – and there is evidence out there. For example, you can look at the VA, they've had a longstanding electronic medical record. They started measuring performance and reporting performance and all of a sudden – guess what – they are doing better than most of the rest of the profession.

Our projections done with computer models assume a widespread adoption and we actually used an adoption period of about 15 years, based on some studies that show that that's about how long it takes complex networked technology to be adopted at a high level. We assumed the interoperability was there and that you've done some of the related process changes.

I am just going to run real quickly through – at 90 percent adoption, what we were able to calculate, extrapolating

up some of the evidence was that the savings of about 77 billion, three-quarters of that goes to the hospitals, about one-quarter to the doctors. And again I remind you, the doctors don't see much of that or the hospital, most of that is going to payers. Hospitals that are closest sometimes have a better opportunity to reap some of that.

The costs are modest. Let me just show you the costs during the implementation period. This is the cost during a 15-year implementation period that we calculate, and that's about between seven and eight billion dollars average per year for cost and about 42 dollars per year for savings. Even during this implementation period, you have about a five to one benefit to cost ratio, just from these efficiency savings alone. Again, it's not an individual provider that reaps these benefits.

Potential safety and health benefits – safety benefits we show, for example, reducing adverse drug events. Again, at the 90 percent adoption level, this is one of the kinds of pictures you might have. Reducing adverse drug events by almost two million and most of those occur of course in the physician's office because that's where most of the drug prescribing occurs. Most of those go to the elderly population because they are the ones that are taking a lot of the drugs and therefore Medicare ought to be interested. They have about a 40 percent share of this.

What about health benefits? This is one of the really interesting and fun parts of the projects. We looked at how might these systems deliver better preventative care or better management of chronic disease. This is just a quick snapshot. We actually built some models where we took this set of people and we moved them into getting more preventative care. You can see on the one shaded colorectal cancer screening, the shaded area. You can see there's a large percent of the population that's not compliant now. And if you brought that population up, the upper bound on that, you are looking at a lot of avoided or at least deferred douse.

The interesting thing about prevention is its an under use and it doesn't save you money in most cases, even if you factor in the savings from having a lesser procedure because you've discovered colorectal cancer early, it's not enough to wipe out the fact that you have to screen everybody. So it does cost you some money, but it has a significant health benefit. And this is the kind of thing that you can do in terms of using outreach guideline reminders that people need this.

This is an interesting case – the people with chronic disease absorb perhaps 75 percent of the healthcare costs in this country. It's a big leverage point. You want to do the right thing and these are very sick people. What we did with a model was to actually move a patient population from the kind

of care that's given now to a very extensive provider-based, community-based disease management program that does all the recommended things.

And then we looked at the different usage of hospitals, physicians, medications and so forth. And the thing about it was that what it does is it keeps the patients out of the hospital and keeps them out of the ER room. And the good news and bad news of that is, yes, there is a savings, but guess who loses the money? The institution that put in the system. So this is what we talk about when we talk about misalignment of benefits that the savings go to somebody else other than who puts it in.

We have several reasons why we think the government should act now. First of all, the EMRS could reduce sort of this unsustainable cost growth and improve quality. The market is not working well. As I said, it's dysfunctional in the sense of who pays and who gets the benefit. You also start to see now – we did some looks at adoption rates – and you start to see that there is a bifurcation in adoption. There is starting to be an adoption gap and the larger systems are adopting and the smaller systems are moving along more slowly. The government is the largest employer and largest healthcare payer, so it has not only a fiduciary interest, but a real health interest in reducing the costs and improving health.

I think the most important and the last message I will

give you is the incentives to put in this stuff. The HIT will be the most effective right now. Here, you have the opportunity because of the early stage of adoption, to steer that adoption in the right direction, towards a standardized, interoperable systems. And we did some simulations, some modeling with some different types of incentives. One of the things you discover is you get a lot of leverage from incentives right now because you can kick up the adoption curve that's at a fairly low level fairly quickly and you get that benefit for the whole period.

Even small incentives – and it obviously depends on what you believe is the elasticity of physicians who are buying these things based on price – but it looks to us like there's a lot of opportunity out there for some kinds of incentives to move this along. That will be the end of my talk.

JOHN IGLEHART: Thank you Dick. That ends our formal presentations. It is now your opportunity to ask questions. If you do so, it would be appreciated if you would identify yourself and the office you are with or the organization you are with. Yes, sir?

ALLAN GLASS: Hi. Allan Glass with Senator Biden. Under the argument that every silver lining has a cloud, I'd like to bring up a real problem, which is how this is going to work in real life, not in a model. And I would address everybody to the Miller paper in the issue. And also, a recent

article in the *Annals of Internal Medicine*, which went to over 100,000 internists, a real horror story about how a foreperson, internal medicine practice, tried to institute an electronic medical record and among the things they found were that the patients left, they lost a huge number of patients because, A) they had to increase the spacing between patients; B) the patients didn't want to wait as long which it took and they, at the end of the year, were still in serious, serious trouble. The practice almost broke up.

And the unexpected problems were, number 1, huge problems with technical support, a lot of down time, which of course, nothing happening, huge costs for the technical support – major, major, major problems with the nonmedical personnel adapting to the new thing. So my question is for Dr. Clancy. A lot of the studies that you've described are going on in Partners Healthcare or Geisinger Clinic or these huge organizations, are there any proposals to actually look at the problems with implementing the medical record in a small individual practice?

CAROLYN CLANCY, M.D.: I am so glad you raised a lot of these issues. First of all, let me tell you there is a happy ending to the story you read in the *Annals of Internal Medicine*. We've consulted with Rich Baron and in fact, there is an article about a dialogue we had with physicians from small practices in this issue of *Health Affairs* that you will

see as part of the issue.

Because he is very, very focused on trying to take the learnings from what his group experienced and help others get over that hump, and that's exactly what we're trying to do at the resource center. A lot of the projects we're funding couldn't get closer to real life than Dr. Baron's practice.

One of the interesting things that has helped them a lot – I asked him why they did it, why they would even have bothered, because I think the experience of many who work in industry or have provided technical assistance is six to eight months into it. People are saying, "Oh my God. Why, why, why did we ever do this?" And he said, "Because we couldn't stand coming to work anymore doing it wrong. People would ask questions like, 'Oh so what was my cholesterol last year?' and we couldn't answer the question." That kind of thing gets real old.

One of the things they were able to do about a year in was to actually send out a letter to all their patients on Vioxx when it was pulled off the market, which otherwise they never would have had the capacity to do. So all of the questions you are asking are about exactly what our work is focused on, small rural hospitals, some small practices, inner-city practices and so forth.

Yes, we are working with partners and we've got a grant at Kaiser and so forth. Some of that is to assess the value

and get more real world details on the benefits and return on investment, but a big focus of our work is getting to all of the questions you just raised.

GEORGE HALVORSON: If I could do a partial response to that as well. The ergonomics of some of the early systems were flawed, left a lot to be desired, the timeframes, the interaction with the physicians. The very first automated medical record I worked with slowed the doctors down and was extremely cumbersome. It took twice as long to see a patient. The new systems are faster, quicker, and more intuitive; they work more closely with the doctor and once the doctors get used to having all of the information about all of the patients, they have a hard time imagining going back.

The angriest letter I've gotten inside our shop in the last year, even from the pilot program that we had – the people working with handhelds, the physicians, and having a really easy interaction. And we finished the pilot and made some decisions about how to do that, they temporarily took the handhelds out of the physicians' hands and I got an incredibly angry letter accusing me of all kinds of nasty things for depriving them of the tool. That same group of people initially in the process went through a learning curve and went through some reluctance, once they were used to it...

And things can be done much more quickly and coding can be done much more accurately, billing can be done much more

accurately. The follow-up on care protocols can be done much more consistently and so the physicians who get to use it, like it. But the ergonomics of some of the systems were extremely challenging and some of the issues relative to support need to be dealt with. Again, the engineering on that is improving on that as well.

ALLAN GLASS: I am just focusing on the transition year. Everybody agrees you are going to take a huge practice income hit that year and for some practices, that's too much to bear, even if they can make it to two or three years, they will be happy about it. So it seems like that's a critical period of time in trying to get through this.

GEORGE HALVORSON: I think currently it's more of a four-week to six-week recovery time. I don't think it needs to take an entire year to recover.

ALLAN GLASS: Dr. Baron, after 12 months still wasn't back up to anywhere near their original practice income.

CAROLYN CLANCY, M.D.: I think the policy question is, is there a case for some sort of support during that transition, whatever it is? And can we get very, very clear results that would help guide those incentives? And that's obviously a big priority focus for the departments and others in CMS. The question that we're focused on is how can we shorten that and make that as painless as possible? By sharing lessons learned and so forth.

HENRY AARON: Henry Aaron, the Brookings Institution. I think the case that all three of you have made for the potential of quality improvement is overwhelming and if anything, perhaps understated given the potential progress in medical science.

The emphasis on cost savings however seems to me to be misplaced for the following reason: We are talking crudely about a two trillion dollar a year industry. At the prevailing growth rates 15 years from now, excluding inflation, we are looking at three and a half or four trillion dollars a year. The annual savings you estimate, Dr. Hillestad, of perhaps that of 60 to 70 billion dollars a year.

What we are looking at is a potential savings that is a small fraction of the level and even of the growth of healthcare spending, so small in fact that I think viewed against the other forces at work, the impact of IT would be undetectable. So to hang this on cost savings seems to me to misdirect attention away from the real payoff, which is a potentially enormous improvement in the quality of healthcare delivery.

And I noted that Carolyn Clancy, in the course of her talk, I think did not use the word “cost” once, but emphasized quality exclusively. I thought that was a good thing.

CAROLYN CLANCY, M.D.: I would never actually offer economic arguments to Dr. Aaron. I think everything you’ve

said is on target. I think I did say “cost effective” because I think that there are huge gains in cost effectiveness, which is far, far from cost savings. I think that we will see how this plays out.

The misalignment in terms of the investments in the policy initiatives that are needed just for the adoption gap I think is a very important question, but the rest I would leave to the modelers.

RICHARD HILLESTAD, Ph.D.: If I could just comment. I agree. If you look at the savings that we projected as a percentage of health cost, it’s a relatively small number. I mean even if you take the upper number where we add in the potential savings from some of the health benefits of 162 billion, you are still talking less than 10 percent of what costs in healthcare are right now.

And to further emphasize this, it’s likely that these will not be taken as cost savings. I expect that a lot of this will go into improving quality of care. You are not going to reduce the number of nurses because you’ve reduced their administrative time; those nurses are going to have more productive time. Doctor’s visits are going to be more productive and things like that.

GEORGE HALVORSON: A couple of comments. I think you are absolutely right that the case for quality is irrefutable. It’s an overwhelming case. When you start looking at the issue

of efficiency in cost savings, I will give you a couple of quick points. Nurse shift change in the hospital – the traditional process, the new nurses will come in, the old nurses will be there, they will sit down, they will talk to each other about each patient, they will pass over a stack of paper on each patient. That's the most dangerous time to be in the hospital.

We have a study that showed more accidents happen during that time than any other time because 43 minutes is the average amount of time for a nurse shift change and the information that's transmitted tends to be inaccurate. Another study showed that when nurses work 12-hour shifts instead of eight-hour shifts, patients were safer because you eliminated one shift change per day, even though the nurses were more tired.

When you automate the entire process, the information is accurate, the prescription information is accurate, all of the work direction is accurate and it takes 12 minutes; and so you go from a 43-minute to a 12-minute process. Those efficiencies are huge.

Same thing is true on the insurance side of the agenda. Right now, when a paper claim is sent out to somebody and there's an adjudication process, there are errors, there are inefficiencies, and there are all kinds of expense. If that whole process is electronic and falls right out of the medical

record with diagnoses and procedures into the insurance process and back again, the whole thing is untouched by human hands and the cost per claim goes from 18 dollars down to pennies. Those are the kinds of opportunities that we haven't begun really to tap into because we haven't started the reengineering that's possible with a system in place.

I'll add one other thing – e-visits. When you look at how many visits right now are done face-to-face taking huge amounts of time for people to drive, park, go to the office, sit in the exam room, go back and you substitute for that electronic visits, electronic follow-up visits. You've got accurate information, great efficiency, better use of physician time, better use of patient time. The opportunities to reengineer the system are huge, but those opportunities will not happen until we have an electronic system in place to engineer from.

JOHN IGLEHART: There are green cards in your folder if you want to write out questions and send them up, we welcome them. Yes ma'am?

CHANTELLE RESOLVE: Hi. Chantelle Resolve [misspelled?] from the American Hospital Association. I just wanted to thank you for this research and note that it really does mirror the experience of our members, the hospital's, and that it's very expensive, there's very little demonstrated return on investment. Savings do seem to accrue to payers and

we are actually finding decreased revenue. Nevertheless, hospitals are very committed to health IT, particularly for the quality and safety gains, that's simply the right thing to do. But we do see a growing adoption gap in the hospital side as well as the physician's side.

I wanted to bring that up because people have been talking about adoption gap in the physician office, but not so much in the hospitals, but we are seeing the small rural revenue challenged hospitals, not able to make these investments. So we obviously agree with you that the government should be acting and acting now and we don't think that budget-neutral programs are sufficient to motivate the change that we need.

I was curious to know if any of you would like to speculate on whether or not we will see that kind of massive inflow of support and I would say both from the government and from the payers in the private sector, to basically bet on IT and say we are the ones who are going to benefit, so yes, we are going to help and we will devise ways to ensure that it's something that promotes quality, which I think all providers are willing to partner and say, "Yes, it needs to be quality improving. We have to do it right." But can you help us with these up-front investments, both on the government side and the private side? Does anybody care to speculate on the likelihood of that?

CAROLYN CLANCY, M.D.: I will give you a partial answer. My crystal ball is a little bit cloudy. What I would say is I think that there is a critical need for some better evidence that relates to the question of scoring, just as with the question of, does disease management save money? The answer is yes, but it depends. And it's been very hard to find persuasive enough evidence to justify an up-front investment. I think the issue here is quite parallel.

It's our hope that some of the work that we are funding and that many other organizations are funding will be a critical part of that answer. But I think absent that, it's going to be incredibly difficult to make a strong case for huge investments.

MARTIN STONERIGHT: My name is Martin Stoneright [misspelled?] I am independent consultant. You used the word "interoperability." Interoperability, as I understand it, is the back end of the computer back in to a regional system or whatever network is set up. But interoperability is not the front end.

Recently at the HIMMS [misspelled?] conference and looking at a billion different medical record systems, and they are all different at the doctor end, which adds to the problem, particularly since healthcare workers very often transfer between nurses and hospital-to-hospital or office-to-office where they may be confronted with a brand new system and no

time or budget to reeducate them in how to reenter data.

So one of my suggestions is that we need to gum down the entry system some kind of a toggle where it was a fundamental basic idiot-proof entry screen for the level at which people have to enter. And use the model of Word, Word Perfect and Open Office, all made by three different manufacturers and yet you can sit down and instantly know 85 percent of how to use that program if you know one of the other programs. They have developed interoperability at the front end, no matter who the manufacturer is. It's rather amazing actually if you think about it. And we need to find a way to sit down and work with the manufacturers and develop that idiot front screen that we can all use. I think it would make a big difference.

CAROLYN CLANCY. M.D.: I guess the only comment – and I appreciate your observations. I am not sure that we have found the one that we would want to standardize just yet. What I am very excited about is the potential for our work to feed back to vendors and people who design systems on the specific human factors issues, which are important in safety, whether you are talking about computers or other practices. The idea that when you switch workstations, it's suddenly going to look different and so forth, I think is going to be a real drag on spurring greater adoption.

GEORGE HALVORSON: Could I make one quick comment on

interoperability? It's an extension of that, but one of the things that we're doing in this country that I think is really smart is we are bringing a lot of very good people together to figure out how we can create standards so that we can have the kind of connectivity between healthcare delivery systems that the banks have between banks that's a really smart thing.

I just learned a couple days ago that the European Union has convened an equivalent group. All of the countries in Europe are basically moving to an automated medical record of one kind or another and they've decided they need interoperability as well, partly because they had a recent court case that allows people from any country to get care in any other country. They basically want to have that interchange.

And I hope that we are in a dialogue with them because I go to Europe, I have to change my cell phone, I can't plug in my razor and I can't plug in any DVDs and it would be nice in this particular one if we broke new ground. Is there something going on?

CAROLYN CLANCY, M.D.: I'd say it's a good idea. I know that there's some dialogue. We've certainly been in touch with the folks in the UK quite a bit and I think it's a great suggestion to further enhance that.

JOHN IGLEHART: Let's go to the back. Tom?

TOM MILLER: Tom Miller, Joint Economic Committee.

These discussions often gravitate toward talking about how to build better and faster pipes, not necessarily the quality of what's flowing through them. And also we talk a lot about either lower costs or a much higher threshold quality of care as opposed to its value.

So my question for Dr. Clancy is if you could flesh out a little bit further what our state of progress is with regard to delivering more relevant point of service information relative to cost effectiveness to the folks who will ultimately be making a lot of these decisions, the end-user consumer. And how far you've gotten in terms of the difficult issues of data aggregation, getting everybody on the same page as to what they are measuring and what they can then use in that regard because that's the other end of this equation we sometimes neglect.

CAROLYN CLANCY, M.D.: Thank you. Really, really important questions. In terms of what is the current state of the science and art for delivering evidenced based information to the point of care in a way that's relevant, really early. Some promising developments. At the same time, we know that in some areas, it seems to work very well, preventative reminders for example. In other areas such as giving physicians advice about which antibiotic might be superior, it's a little more challenging.

So there's a great deal to learn and I am thrilled that we have a lot of investments in this area because as we are

responding to the mandate under Section 1013, information technology systems, whether through personal health records, web sites or clinical decision support, are going to be an incredibly important vehicle for us. And understanding how to do that well is going to be very, very important as well.

I wasn't sure I understood your question about data aggregation, so I wondered if you could talk a bit more about that?

TOM MILLER: There's a lot of data that is sitting in public containers that private parties would like access to. Now the problem is getting everybody to be on the same common base and deal with kind of some of the coordination of the interest groups, but I believe that some people would like to be able to liberate what may be in the Medicare files for example in order to make their own stances on longitudinal cost effectiveness. And the broader ideas to what you're measuring that's care.

CAROLYN CLANCY, M.D.: No, absolutely. And let me just say that we are working very closely with CMS because the Administrator, Mark McClellan, is incredibly excited by the opportunity when Part D drug claims data are available in early 2007 to actually link Part A, B and D and make that available to begin to address issues that we've simply never had any data for before, not only which drugs work, which are cost effective, for whom and under what circumstances, but also

issues related to safety, which we, again, have not really had good data sources to assess issues of adverse drug effects and safe use for people with chronic illness who are these medications for long periods of time. So I think it's going to be very exciting.

We will announce next week some new investments and networks of partners that we will be working with to develop better methods to be able to take full advantage of that kind of data, but I think there's going to be full cooperation.

JOHN IGLEHART: Yes ma'am.

NANCY BREEN: Hello. Nancy Breen [misspelled?], National Cancer Institute. As we move to the early adoption stage of electronic medical records, one of the issues that I think it's important to look at and I know there are a number of committees that are making this recommendation now, is the distribution of quality.

And there's quite a lot of evidence from other sources, not so much administrative records, there's some from your Medicare for example, that there are differences, big differentials in utilization of services and outcomes by race, ethnicity, for immigrants, primary language and of course socioeconomic status.

It seems important that that information be part of the electronic medical record, but it doesn't seem clear what would be the incentive structure for collecting those records at the

point of service or probably at the point of enrollment. So I'd just like anybody on the panel who has thought about this or has some ideas on how we might go about this to make some comments on how we might move forward on this. Thank you.

CAROLYN CLANCY, M.D.: As you know Nancy, and I think the number of folks here do every year, we are required by the congress to provide an annual report on quality of care and also one on disparities in healthcare. So the distributional issues that you are mentioning are quite acute for us.

Right now, actually because they came to us, we are working with nine health plans that collectively cover about 78 million Americans in a learning collaborative to try to figure out how do we build on efforts to assess and improve quality of care and use that to reduce disparities in care. We are learning a great deal. We are also learning from some investments that were made several year's ago in the community health centers about what role information technology plays there, what other interventions that are effective under what circumstances and so forth. I would predict that in the near future, we are going to have much better evidence about how to begin to address some of the issues that you are addressing. Having said that, none of that will address the problem of no insurance for a number of these people, which is a related and very important order of business.

One of the questions that comes up is how do you

identify these people? And in our collaborative, we are trying different strategies. Some plans simply have no patient level information and we have developed a tool with the folks from RAND always, to identify the subgroups at highest risk of poor quality using zip code level data at the census tract, I believe is the correct term, guided by those who are most expert in using this approach.

Some plans like Aetna are actually offering patients the opportunity to voluntarily provide this information to a portal. Interestingly, when they try different strategies and had to negotiate with different states, they were doing this one patient at a time and it was taking a really, really long time. When they opened up the web portal, suddenly enrollments or people volunteering, quadrupled or more in a very short period of time. I think that's going to be an experience that we can learn from on the ground, but I don't think we need to be wanting to build another digital divide as we are trying to spur the adoption gap and there are others in the department working very hard on this as well.

GEORGE HALVORSON: One quick comment. We had a team of people working to exactly those issues in our organization. We built in a portion of the system that keeps track of that information and we set the research agenda up so that we will be going forward and tracking based on various ethnicity's and cultural differentiations and performance outcome levels of

utilization and trying to get a good picture of the disparities that might exist, but also the differences that might exist relative to disease prevalence and other kinds of things that we know are going to be relevant. So we've made the commitment to do it.

We actually spent a lot of time two year's ago in California politically fighting the initiative to make it illegal for us to do that. If you're not familiar with California law, it's an interesting state, but there actually was an initiative. We spent a ton of time fighting and we were the lead signatory on the ballot opposing the forbidding us to keep track of that information. We've been doing it very publicly, but also we have built it into the system.

NANCY BREEN: Does Kaiser collect that information on the records?

GEORGE HALVORSON: Yes, we do.

NANCY BREEN: Race, ethnicity, primary language and socioeconomic status?

GEORGE HALVORSON: Yes. Well, I don't know about socioeconomic status. We know who is on Medicaid, MediCal, but I don't think we have the other socioeconomic status.

NANCY BREEN: Education might be a possibility.

GEORGE HALVORSON: Yes.

JOHN IGLEHART: Here's a question from the audience. Discussions have centered on physicians and IT leaving non-

physicians out of congressional and administration policy. What are our efforts to get non-physician, such as physical therapists or nurses involved? Either at the delivery level, George, or in the government.

CAROLYN CLANCY, M.D.: Let me talk about a couple of initiatives. Several years ago, the department encouraged and then required bar coding of medications so that hospitals that had those systems could actually use that to reduce administrative drug errors. This is a critical part of the job of frontline nurses in hospitals every day. We are supporting a number of projects to make sure that that actually works as intended. It sounds fairly simple.

On the other hand, making sure that that is integrated into the work flow and in a way that's helpful for the nurse, rather than just giving her or him something else to do is the same issue for all healthcare professionals. I don't think that we are supporting any work with physical therapists. We have a number of exciting projects going on in nursing homes, but there's no question that this cannot be limited to physicians.

GEORGE HALVORSON: Internally operationally, we have internal units that provide input from pharmacy, nursing, other areas. When we did the design of the medical record, for example, the nurses as a group came up with over 100 suggestions for ways that the medical record could be done

differently and the majority of those ended up being adopted into the system. And so we have that input in an organized way.

Pharmacy is a huge underutilized resource almost everywhere in American healthcare. We've got a lot of pharmacy input. A lot of the things we do drive off the pharmacy information, so we've got pharmacists involved as partners in that development as well. We agree with the comment.

JOHN IGLEHART: Kaiser operates regions around the country. One hears often that there are cultural barriers that are preventing implementation of IT. Have you had different rates of implementation or enthusiasm, depending on where in the country you were operating?

GEORGE HALVORSON: Interesting question. The second doctor who was hired at Kaiser Permanente 50 some year's ago when computers first came out, decided that the future of medicine was an automated medical record and he actually used punch cards and he started creating automated medical records with punch cards and we have an archive room full of those punch cards. It turned out to be ergonomically a little inefficient at that point in time, but the idea was right and that history is followed. So every region has done it's own initiatives of one kind or another.

Some people have different partial medical records off the pharmacy database, some regions have different partial

records off the scheduling database, and different people have done disease-specific records. I will, for example, for heart patients – the culture has been extremely pro-computer and so I think we've had an easier time than most in going forward. We haven't faced the resistance and I haven't seen any regional resistance. The physicians are doing a great job with the computer. Colorado, no problems; pioneers in the Northwest; the pioneer Washington, DC actually created its own stand-alone automated medical record that was ergonomically unworkable, but it gathered some good data and was a good step in the right direction. We have not had a problem.

JOHN IGLEHART: Yes ma'am.

FEMALE SPEAKER: There has been some debate over whether the system of healthcare in the United States is still the number one healthcare system or if in recent times it may have dropped. I know that the World Health Report certainly had some discussion of that and talked about how the quality of care disparities in the United States may be worse than in some of the other industrialized nations.

I am just wondering, there was an earlier reference to the British adoption of health IT and I didn't know if some of the folks that are doing the research, such as yourselves, have seen any improvement quality of care disparities in England and the United Kingdom and how that may compare with the United States or what lessons we can learn from the British experience

here in the US with respect to the disparities of care.

CAROLYN CLANCY, M.D.: I think it's a little early to draw definitive conclusions. One interesting thing that's going on in the United Kingdom is that there's a very comprehensive effort to have a performance contract with general practitioners, which has many, many measures – I think more than any healthcare organization in the states uses by and large.

Interestingly, in most of our conversations with colleagues from Western Europe, they do not talk about disparities; they talk about health and equalities and tend to focus more on socioeconomic issues than racial and ethnic issues. Why that is, is a little bit less clear to me, but it is clearly a high priority item for them as well. I think there will be a great deal to learn from them, particularly around the issues of smaller practices and how does that come up to speed. But they are pretty early in their process of blowing this out nationwide.

JOHN IGLEHART: This is a question for Dr. Clancy. President Bush recently signed into law a patient safety measure. And the question is, how do you envision its implementation and will IT play a role?

CAROLYN CLANCY, M.D.: First, for anyone here who helped work on that bill, let me tell you how excited we are that it passed – surprised a little bit by the timing in July,

but very, very excited. We are still working with the department, but we will be putting out some information in the very near future.

For those of you who haven't followed this bill over the past several years, it enables the creation of an entity called "Patient Safety Organizations" so that providers can collaborate to improve quality and safety, if they are working with a patient safety organization, without fears of liability.

That is to say, the additional analyses they do of which errors occurred and which strategies are effective to prevent them are protected from being discoverable as the basis of lawsuits and so forth. So it doesn't offer reimbursement or financial assistance, it does remove an enormous barrier that many providers have felt is very important to their efforts to improve quality and safety.

Part of the bill also provides the Department of Health and Human Services the opportunity to define common definitions of different types of patient safety events, which I think is going to be quite critical, and offers the agency the opportunity to host a network of patient safety incident reporting systems. Without common definitions, such a network would not have very much meaning.

So at the level of both standards to enable reporting from those systems that have health information technology installed, as well as the level of standard definitions of what

is a patient safety event, IT is going to be a quite critical part of this. I can probably give you a much longer answer in the very near future, but there are clearly going to be some very important intersections.

JOHN IGLEHART: Another question from the audience. How do we incentivise physician practices to absorb the initial startup costs and the ongoing maintenance costs when there's a misalignment of incentives?

RICHARD HILLESTAD, Ph.D.: There are several different approaches that one might take to incentivizing physicians. I mentioned a couple of them. There is the pay-for-performance or pay-for-use is sort of one of the debates about what might be done. Pay-for-use is the simpler of the approaches. The problem that you have is what kind of use and are they actually using it to improve quality.

Pay-for-performance, which I think is the direction we are heading at this point, sort of leaves it open exactly what kind of system they might have to use and it certainly has to be a system that can report performance, but does it have to be an interoperable system or had some of the other kinds of features that you would like to have. So I think that needs to be sorted out. But anyway, those are two types of approaches.

And then a number of the things that are going now that are already underway should help. Certification commissioned to help. One of the problems that physicians have is "I don't

want to buy the wrong system" so a beta max version of the system, as people say, that becomes obsolete or a system that the vendor goes out of business and, "I don't have any support anymore." And then, as was discussed a little bit earlier in one of the questions, help during the implementation stage, having organizations help. And I think some of that help will come from associations. That's not necessarily a government activity that has to take place. The American Association of Family Physicians is one that's trying to provide some guidance and some help in that.

JOHN IGLEHART: It would seem to be in the interests long term of health insurers to support this kind of activity. George, we haven't seen that much that I am aware of. Would you envision in the future that private insurers will be persuaded that it's in their interest to help implement IT?

GEORGE HALVORSON: It's hard for me to speak for insurance in general, coming from the particular model that we come from; we obviously, as a combined insurer care system, are funding the implementation of an automated medical record.

But the opportunities and savings for the rest of the industry I think are pretty obvious and quite large. And so I think there ought to be a business case made that there ought to be support from both of insurers and also from Medicare. My own sense is that some combination of Medicare offering zero interest loans to physicians who put in approved systems and

then basically saying after a certain date, there will be an added expense of filing claims that don't come in electronically. Some combination of that kind of incentive, we'd get people moving in the right direction. And I think it's possible that if Medicare took the lead, there might be some collaboration from the insurance industry as well because everybody will benefit from the system getting there. So I think a collaborative effort along those lines would make sense.

Right now, if you had an airline ticket, a couple years ago they were all paper, then some of them were electronic. Now, I've discovered that if I want a paper ticket, I have to pay 25 dollars extra. I think that kind of evolution that if you want to file a paper claim in the future, there probably ought to be a cost burden associated with that on the one hand. The second end is I think it would be really good if Medicare or the government could make that capital available at zero interest, or even in some cases, a partially forgivable situation if the provider provided a certain volume of claims to Medicare. So I think those kinds of incentives need to be put in place to make it happen in a collaborative effort with the industry I think would be good.

CAROLYN CLANCY, M.D.: First of all, there are a lot of private insurers that are doing this now. Obviously I think their propensity to do so depends both on how they are doing

financially, as well as how much market share they have in a particular region.

Having said that, it's not necessarily an easy thing to do. Well Point a year or two ago actually offered many of their physicians either specific hardware and software or cash to buy the same. Now of course, even if you are handed a check to go buy a computer absent a certified product, you still have the beta max problem and all of that.

But the uptake of this from this offer was relatively low, leading the CEO at the time, Len Schaffer [misspelled?] to conclude that free wasn't cheap enough. But to me, it underscores the issue that the hardware and software is maybe one-third of the solution, the rest gets into technical assistance in terms of trying to figure out how to make it work for your practice and not blow it up.

JOHN IGLEHART: The need for standards and interoperability suggests the need for the federal government to take the lead and jump-start this activity, but states need benefits for Medicaid and their own healthcare programs. Is there a role for states now and what is it?

CAROLYN CLANCY, M.D.: The issues of standards and certification are obviously going to be a big focus for the American health information community, which Secretary Leavitt just recently announced. We are also hearing from many, many states as they confront their Medicaid budgets that they are

very interested in these areas as well, which is part of the reason why many states are calling on us for technical assistance, what can they put in place, they've really got one eye or if not both of them fixed very squarely on what they can do about rising costs in Medicaid. So I don't know that there is a single answer for all states just as there is really a single answer for all states for almost any issue.

But I think the really good news is that there's a great deal of interest, almost more than I think we can accommodate right now. We are working very closely with the National Governors Association to try to figure out what is the right answer to that question so that we can be most efficient in providing that assistance.

GEORGE HALVORSON: A quick comment on that one. I think the states can use their purchasing power, both through the Medicaid program and also through the other programs that they have for their employees to encourage adoption of this technology. That's one good thing.

The thing that they should not do is set separate standards by states. If they started setting separate standards by states with the analogy alike, it would be like having the railroads hitting the state line and having the tracks go from two feet apart to three feet apart. We do not need at this stage of the game separate standards imposed by states on the interoperability because it will end up creating

all kinds of problems and making the situation more complex rather than more efficient.

JOHN IGLEHART: Another question for Mr. Halvorson. Several year's ago, the buzz was that e-signatures were going to slash health paperwork and expedite claims processing from such applications as Medicare physician certifications. This does not appear to have happened, at least yet. What has happened at Kaiser? What are the barriers? What are the lessons for future IT uses?

GEORGE HALVORSON: I think you said [Inaudible] are still part of the future. They don't have any particular lessons in mind. It's a direction that people need to move in. If we are going to have electronic prescribing, we have to have the ability to have the doctors identify it in an appropriate way and have the prescriptions flow through and electronic prescribing is more efficient, effective, cost efficient and there's all kinds of reasons why it makes sense to do it.

I misunderstood the question. I think it is something that needs to happen. It probably hasn't happened as quickly as people might have thought on a broad scale because e-connectivity in healthcare hasn't happened on a broad scale and as e-connectivity happens, electronic order entry is going to be part of the agenda for hospitals, as well as clinics.

JOHN IGLEHART: We will give you the last question ma'am, back there.

JANE THORPE: Great, thank you. My name is Jane Thorpe [misspelled?]. I am from the Advanced Medical Technology Association. We have been doing a lot of work with the implementation for ICD-10 and I am wondering what your thoughts are on that. We are hearing that in several bills, they are calling for implementation of ICD-10 by as early as 2008, but we are also hearing that that may not be possible until 2013 or past that and I am just wondering what your thoughts are on ICD-10 and the processes for that?

CAROLYN CLANCY, M.D.: I guess my initial thought is I would be much better to hook you up with one of my colleagues who has been following this very, very closely over time. There are issues on both sides, as you know. There are many countries that are going ahead with this and the question is, can we afford not to? At the same time, can we afford the transition? But I would be glad to talk to you afterwards.

JOHN IGLEHART: Thank you. With that, I'd like to thank our panel of speakers. [Applause] And thank you all for coming. We are adjourned.

[END RECORDING]