

**Health Information Exchange Hearing
HIT Policy Committee and HIT Standards Committee
Transcript
January 29, 2013**

Attendance

The following Committee members attended this meeting:

- Farzad Mostashari
- Paul Tang
- Christine Bechtel
- Arthur Davidson
- Connie White Delaney
- Judith Faulkner
- Gayle Harrell
- Deven McGraw
- Marc Probst
- Scott White
- Madhulika Agarwal
- John Halamka
- Dixie Baker
- Anne Castro
- Christopher Chute
- John Derr
- Jamie Ferguson
- Leslie Kelly Hall
- Stanley Huff
- Arien Malec
- David McCallie
- Wes Rishel
- Walter Suarez
- Sharon Terry
- Kamie Roberts for Charles Romine
- Tim Cromwell

The following Committee members did not attend this meeting:

- David Bates
- Christopher Boone
- Neil Calman
- Richard Chapman
- Paul Egerman
- Charles Kennedy
- David Lansky
- Frank Nemec
- Joshua Sharfstein
- Latanya Sweeney
- Patrick Conway
- Thomas Greig
- Robert Tagalicod
- Jonathan Perlin
- Floyd Eisenberg

- C. Martin Harris
- Kevin Hutchinson
- Elizabeth Johnson
- Rebecca Kush
- J. Marc Overhage
- Christopher Ross
- James Walker
- Lorraine Doo
- Nancy Orvis

MacKenzie Robertson – Office of the National Coordinator

Thank you, good morning everybody, this is MacKenzie Robertson in the Office of the National Coordinator for Health IT. This is a jointly sponsored hearing on Health Information Exchange by the HIT Policy Committee and the HIT Standards Committee. This is a public hearing and there are two public comment sessions built into the agenda. The hearing is also being transcribed so for anyone speaking if you could please identify yourself before speaking and instead of doing a roll call I think since we have such a mix of members it would be better if we could just go around the table and everyone just introduce themselves. So, I'll turn to Kory Mertz.

Kory Mertz – Challenge Grant Director - Office of the National Coordinator

This is Kory Mertz with ONC.

Mary Jo Deering, PhD – Senior Policy Advisor – Office of the National Coordinator for Health Information Technology

Mary Jo Deering, ONC.

Judy Murphy, RN, FACMI, FHIMSS, FAAN – Deputy National Coordinator for Programs & Policy – Office of the National Coordinator

Judy Murphy, ONC.

David McCallie, Jr., MD – Vice President – Cerner Corporation

David McCallie, the Standards Committee from Cerner.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Deven McGraw, the Policy Committee from the Center for Democracy and Technology.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Wes Rishel, Standards Committee, Gartner.

Judy Faulkner – Founder & Chief Executive Officer – EPIC Systems Corporation

Judy Faulkner, Policy Committee, EPIC.

Arthur Davidson, MD, MSPH – Director – Denver Public Health Department

Art Davidson, Policy Committee, Denver Public Health, Denver Health.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

John Halamka, Standards Committee, Beth Israel Deaconess Medical Center.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Farzad Mostashari, National Coordinator for Health IT.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Paul Tang, Policy Committee, Palo Alto Medical Foundation.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Dixie Baker, Standards Committee, Martin, Blanck and Associates.

Christopher G. Chute, MD, MPH, DrPH, FACMI – Professor – Mayo Clinic College of Medicine
Chris Chute, Standards Committee, Mayo Clinic.

John F. Derr, RPh – Health Information Technology Strategy Consultant – Golden Living, LLC
John Derr, Standards Committee, Golden Living.

Leslie Kelly Hall – Senior Vice President – Healthwise
Leslie Kelly Hall, Standards Committee, Healthwise.

Stanley M. Huff, MD, FACMI – Chief Medical Informatics Officer - Intermountain Healthcare
Stan Huff, Standards Committee, Intermountain Healthcare and the University of Utah.

Walter Suarez, MD, MPH – Director – Kaiser Permanente
Walter Suarez with Kaiser Permanente and the HIT Standards Committee.

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator
Gayle Harrell, Policy Committee and State Representative from Florida.

Jamie Ferguson – Vice President, Fellow - Kaiser Permanente, Institute for Health Policy
Jamie Ferguson, Standards Committee, Kaiser Institute for Health Policy.

MacKenzie Robertson – Office of the National Coordinator
And if there are any committee members on the phone if you could please identify yourself?

Connie White-Delaney, PhD, RN, FAAN, FACMI – Professor & Dean – University of Minnesota/School of Nursing
Connie Delaney, Policy Committee, University of Minnesota.

MacKenzie Robertson – Office of the National Coordinator
Thanks, Connie.

Sharon F. Terry, MA - President & Chief Executive Officer - Genetic Alliance
Sharon Terry, Standards Committee, Genetic Alliance.

Anne Castro – Vice President, Chief Design Architect – BlueCross BlueShield of South Carolina
Anne Castro, BlueCross BlueShield of South Carolina.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare
Marc Probst, Policy Committee and freezing.

MacKenzie Robertson – Office of the National Coordinator
Thanks, Marc.

Scott White – Assistant Director – 1199 SEIU United Healthcare Workers East
Scott White, Policy Committee, 1199 SEIU.

MacKenzie Robertson – Office of the National Coordinator
And are there any others?

Tim Cromwell, RN, PhD – Director Standards & Interoperability – Veterans Health Administration
Tim Cromwell, Standards Committee, Department of Veterans Affairs.

MacKenzie Robertson – Office of the National Coordinator
And are there any other committee members on the line?

Kamie Roberts – Associate Director - National Institute of Standards and Technology
Kamie Roberts for Chuck Romine, Standards Committee.

MacKenzie Robertson – Office of the National Coordinator
Thank you, okay with that I'll turn over to opening remarks to Dr. Mostashari.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Thank you MacKenzie and thank you all for attending this rare joint session of the Policy and Standards Committees. We have an important hearing today on health information exchange. It is one of the most important goals that we have for establishment of a secure nationwide health information network and the fundamental...I think, while the issues are complex the goal is pretty clear to folks that when a patient needs care the information they need should be available to help them. That's pretty fundamental and pretty easy to understand, a gap in our current healthcare system and anyone who has had any experience with the healthcare system knows that how far short of that goal healthcare today falls, how many patients show up for a referral and the specialist says "I didn't get any paperwork on you. Tell me why are you here?"

People are discharged from the hospital and they go to their primary care doctor who says "I don't know what happened during the hospitalization." They are in the emergency room and their information can't be accessed "is this finding on your EKG new or old?" And often times it falls on the patient and their family to have to cope with this failure on, frankly, our part of the health system. So, this obviously matters and there has been...this is not the beginning of this journey.

I was talking to some of veterans around the table here who remembered, you know, when HL7 was founded back in 1987, when IHE, Integrating the Healthcare Enterprise was started in 1997, when certification program included interoperability with CCHIT was started in 2004. So, we have been in various ways as a community struggling with achieving this goal for 25 years, 15, now then there was a new invigorated approach when the Office of the National Coordinator was founded in 2004 and then HITECH gave a tremendous boost to this all in 2009 and with that boost came even higher expectations of what we should be able to accomplish and the timelines with which to do that.

We have made significant progress in recent years and in particular I think a milestone that will be I think looked back on will be the Stage 2 standards and everything else that goes along with making those move from standards in committee to exchange in communities, that's where the rubber is going to hit the road and it's going to happen over the next year. This is a critical time for delivering on the promises that electronic health records will be able to speak to each other.

Stage 2 does put many of the key pieces of exchange and interoperability in place. A provider attesting to Meaningful Use Stage 2 should be able to use a certified EHR to share an electronic copy of a care summary with another provider regardless of which electronic health record the other provider is using. The information is structured and coded allowing the receiving provider to understand and to use the information for patient care and incorporate it into the electronic health record. This same coded information will also be shared with patients enabling a new ecosystem of business and technology innovation supporting patients in this care coordination in managing their health, managing their health finances, making critical health decisions.

So, yes Stage 2 has set the stage to accelerate the drive towards increased health information exchange and we are all part of the solution to making that real and working on the implementation issues, on the certification issues, on the testing issues, on the troubleshooting, on the debugging, right? You can't expect it all to work perfectly and we have to work together to achieve the promise of that. But it's not just about standards and I think this is part of why the conversations about information exchange and interoperability often times seem overwhelming and it's only by parsing the issues into their respective domains that we can start to understand what the roadblocks are and what the progress made has been, and to recognize a new ecosystem that's emerging.

Simplistically I think of it as cost, benefit and trust. Reducing the cost of exchange through standardization, reducing the cost of every interface through technical specifications, standardization, it's about increasing value. You can have perfect interoperability and not have any exchange of information if it's against someone's business case to do so. So, changing the payment system, changing the context within which healthcare is provided to make sharing information the profitable thing rather than hoarding information, that is a key part of making exchange actually occur.

And once the cost of establishing information flow comes down, the value has increased and parenthetically interoperability helps, standards help both reduce the cost and increase the value of the information received. Then information will flow, information will flow initially, as Tim has put it on a first name basis, people you know, people you trust, out of band trust. But to really get...and that is happening and we see that growing, as we'll hear from Micky, but to really get the promise of from anywhere to anywhere, exchange of information, we also need to support the development of trust and this will be the topic of I believe the third panel today, the governance activities.

So, we are going to talk about the health information exchange enabling healthcare transformation and the effects that healthcare transformation is having on creating a business case for information exchange. We're going to talk about the technical and business barriers and opportunities in panel two and we're going to talk about the emergence of governance barriers and opportunities, and approaches to supporting the development of trusted exchange between parties who are not on a first name basis with each other.

Panel four in a way is maybe one of the most exciting and maybe one of the opportunities here when we talked about our strategy for health information exchange, Claudia Williams article in Health Affairs, we talked about three ways in which exchange is going to occur and separated the verb of exchange from the noun of a health information exchange and we said EHRs will be able to speak to each other, there is going to be some ubiquity in the ability of electronic health records to do point-to-point exchanges of information whether it's push of information or a targeted query for information that will occur.

We will see the emergence of more and more complex systems that provide information exchange services for communities, for networks, infinity networks that will do more than just push information or pull information back and forth, they'll provide services around identity matching, around mapping and semantic integrity, they'll provide services around consent management, they'll provide services around analytics, services around hot spotting and helping make sense of the data and information. There will be those networks that emerge and they are emerging as we'll hear.

But, there's a third way in which information exchange can also occur and that is consumer mediated where the patient is able to get their own information and able to share it with whoever they please, and that will be our fourth panel because it is the magic of patient control and patient ownership that cuts through the Gordian knots of so much of the challenges around policy trust, privacy and so forth and so we'll be very excited to hear about that emerging and I do want to challenge us as we embark on today and the work over the next year to not only look for the problems but also the solutions, because the stakes are too high for our patients for us not to push, not to push each other, not to push ourselves, not to push every part of the system to make it so that the next time someone is discharged from the hospital shows up for a referral, shows up in an emergency room the delight with which the information is there, the information you need is there and is available and can be used.

So, let's take that on, it's going to be a shared responsibility for us all and we can all play a role in finding the solutions and the opportunities as well as the challenges today. Thank you. Let me turn to Micky Tripathi who's going to give us overview, he is the Chair of the Information Exchange Workgroup, and will give you an overview of kind of where are we, what is the state of health information exchange in 2013.

Micky Tripathi – Massachusetts eHealth Collaborative

Great, good morning everyone. I am excited and terrified at the opportunity to set the stage for today's panel. So, I've got...we've got 30 minutes, I'm going to ask MacKenzie to keep us honest here. I am happy to stop at any point and answer questions or, you know, if people want to stop for discussion and I think the slides have just been distributed to you. I've been, you know, working in the Doug Fridsma, I'm glad Doug walked in, but the real-time slide delivery mode. So, apologize for that. But, why don't we just launch in?

The first thing I wanted to say, just as background, is that, you know, something...taking on the topic of the current state of HIE is definitely more art than science. And in particular it's, you know, one implication of the fact that we have a lack of uniform interoperability is that we don't have the ability to easily measure things on an industry-wide basis, right? And that's just one implication of it.

And the fragmented nature of the healthcare delivery industry in general means that, you know, you end up having to, you know, try to start to rely on survey methods and, you know, a wide variety of things that because of the heterogeneity of the country, the size of the country those are, you know, more elaborate kinds of undertakings.

So, for this assessment this is really, you know, partly quantitative where such data is available, but mostly impressionistic and what I've done is gathered input from a wide variety of individual experts and organizations and then I made up the rest. So, you know, you can guess which parts are from expert inputs and which parts I made up.

So, let me see, I'm following on my local device here too, because I can't read the screen. The first thing I just wanted to give credit for the generosity of time that a number of people and organizations provided, this is not to suggest that any organization did not want to talk to me about this it was really just more a function of who I could get to in the time that I had. So, definitely don't want anyone to feel that if they're not on the list or any suggestion that no one was willing to participate, everyone I called was happy to talk openly and give both information as well as advice and guidance.

So, the first thing I'd like to...just sort of as a table setting is kind of describe, you know, where are we and Farzad you referred to it a little bit in thinking about, you know, sort of where we were and, you know, where we've come and what I would characterize as, you know, we're maturing from HIE 1.0 to HIE 2.0. So, what was...you know, what where sort of the characteristics of HIE 1.0? I mean, first and foremost and, you know, Deven will remember this from our many conversations in the IE Workgroup, you know, the noun versus the verb.

That, you know, HIE 1.0 was really characterized I think by a sense of, you know, HIE the verb, the noun and, you know, very much was, you know, focused on trying to solve market failures, multi-entity governance often driven by third-party entities, striving to solve a wide variety of very rich use cases through comprehensive interoperability, so solving a wide variety of use cases with, you know, pretty, fairly rich set of architectures and interfaces to enable that.

Also, trying to tackle complex legal business and technical requirements to support that rich array of use cases, and then, you know, finally trying to tackle those policy issues to enable the business practices and technology solutions. So, all of that was, you know, a part of that and I'm obviously, you know, drawing as an extreme, but I think that, you know, we can find a lot of roots in that and I was certainly, you know, a part of that. So, don't mean that to be deprecatory in any way for, you know, for those of us who were, you know, thinking about it in that way.

Now, we, you know, we've moved to HIE 2.0 and we're fully in it where the focus is much more on the verb HIE. HIE means Health Information Exchange transactions may or may not be mediated by some type of organization that calls itself a HIE, more demand-driven rather than trying to solve a market failure, it's actually trying to meet market needs that are bubbling from the bottom up, which is a great thing, more tactically focused to meet immediate interoperability needs. So, rather than trying to have a full solution to solve all the use cases, trying to grab whatever tools you can to solve whatever use cases you can right now, because that's where the need is.

Often led by any organization that has the business need and the ability to marshal financial, technical and organizational resources, so, what can I grab, what can I have some authority over and how do I move it, and often designed to fit within existing legal business and technical constraints. So, let's not wait to try to get the legislature to pass something that's going to enable, you know, something larger, let's try to fit whatever we do within the current paradigm that we have and indeed, you know, in some cases that means the technology gets out ahead policy in some areas as we've seen. But, you know, if I was going to, you know, in a very stylized way sort of think about, you know, where we were and where we are this seems to, you know, capture a lot of the flavor of it.

There is another way of looking at this and it's...let's see it may not be...oh, no, okay, no never mind. And, so what's driving this transition? Well, I point to a couple of things, certainly, you know, Farzad had, you know, cost, benefit and trust, I think that that's, you know, sort of underlying a lot of what, you know, what is on here and, you know, one of the things that's driving it is, you know, just to be honest, is the limited success of the prior model, right?

There have been pockets of success and we'll talk about those and, you know, there have been pockets of deep success, but it hasn't been uniform and, you know, those have been genuine pockets of success with, you know, a lot of hard work to get those pockets going. Bottom up demand is certainly one driver of the move from 1.0 to 2.0 and I would argue that in part, you know, systems are not interoperable because not enough customers ask for interoperability.

I think we're in a new world now that's more demand-driven, but I think that that's, you know, partly a function of that market dynamic. HITECH, Meaningful Use incentives certainly a part of that, value-based purchasing and general trends, more general secular trends like market expectations about standards of care. We have a higher expectation about what a standard of care is now. Younger provider expectations about the use of technology, it is almost impossible to think about a younger generation clinician, you know, walking into an MS DOS type environment while they're streaming Spotify on their Android device, I mean, it's just not, you know, it's just culturally not going to work. And, then finally more consumer expectations about the use of technology, you know, all of those I think are, you know, part of that demand-driven part that's moving us from 1.0 to 2.0.

On the supply side certainly the EHR certification requirements set a common floor and a common denominator that's, you know, been incredibly important in a very fragmented industry, as well as, again the secular trend that underlies, you know, everything that came from HITECH which is just, you know, technology advancements and cloud services, mobile, broadband, storage, patient matching capability, what have you all of those pieces are moving as well. So, all of that, you know, kind of moves us more toward decentralization and the bottom-up phenomenon of HIE more than the top down. And, you know, I think it's not as if healthcare is the only industry that's going through that, almost every part of the economy, I think, as you know is going through that.

So, what's a good way to, you know, divide up this, you know, this sort of amorphous mass that we call HIE and there are many ways of doing it, one way that I would suggest that we use here just to walk through it, and there are many ways to cut it, at the end of the day we're all trying to look at the same thing, but one way is to just think of, you know, sort of what level of HIE are we are talking about in terms of the type of coordination or orchestration that would be needed to enable the kind of HIE function that we're talking about.

So, you can almost think about the, you know, 1.0 almost being sort of at the top and as you move down it gets to more and more 2.0. I mean, that's a, you know, general, it's not, you know, true uniformly, but, you know, we might think of at the top there being the national level collaborative HIE organizations and moving down to the state and regional level collaborative organizations, down to what we would call the enterprise level HIE organizations or the private HIEs, which is the term that you hear a lot, which is, you know, more driven by a single entity or a single small group of entities focused on an accountable care or, you know, a value-based purchasing type of model to solve an immediate localized need.

There are transaction specific national level types of networks. For instance, ePrescribing and Surescripts is, you know, the main example there. And then finally you get down to vendor specific types of networks such as eClinicalWorks, EPIC, Cerner have and then I move down to what I would, you know, characterize generally as point-to-point and then ultimately point-to-patient, which is, you know, kind of what Farzad was talking about, is that, you know, sort of the HIE of one kind of idea where the patient starts to control how health information exchange happens, is that the end point on the spectrum.

So, I'm going to walk through each of these and give a little bit of characterization of where we are in each one. Again, we could disagree with whether this is the right way to frame it, but I think the underlying facts, such as they are, are, you know, probably what we want to get to anyway. I would point out that there is another way of cutting it which isn't exactly orthogonal to the way I just showed, but it is a little bit of a different view, which is to say not how is the envelope sent around but what's in the envelope.

And you can think of in a highly stylized way, you know, sort of a spectrum of things that we might think of as being data integration, which is again what Farzad was referring to earlier, to, you know, to have highly structured data that is semantically interoperable so that I can consume it, export it and be able to use it across systems, that ability to export and import, and incorporate it for, you know, all of the EHR analytic and decision support types of functions. You could get to, you know, one more primitive sort of level which would be document integration that I can send around just documents that I'm able to present for human reading, but I'm not able at a machine level to parse them and do things with them.

And then finally, there is, you know, sort of...I'm not going to call it a new area, because it's been there for a long time, but it seems to have a lot of growth and we're going to hear from Mike Lee from Atrius and John Halamka from Beth Israel can certainly speak to this as well about what you might think of as visual integration, which is really just providing a view from within one's system into someone else's system. No data exchange, no document exchange but just solving that point of care need to get information from one entity to another and what you see in the market right now is that there's actually a lot of growth in this kind of visual integration whether it's, you know, EPIC doing it across customer, provider organizations like Beth Israel.

And again we'll hear from Mike Lee from Atrius, about how they're, you know, really doing this in a lot of places. It's got a lot of limitations, but it is a form of health information exchange that I certainly wouldn't have, you know, really anticipated growing quite in the way that it is now, which is, you know, kind of interesting. It speaks to the tactical nature of this, people grabbing whatever tools they have to solve as many problems as they can and not waiting to solve the big problem.

Undocumented integration that's, you know, growing rapidly and likely to increase even more with the maturation of Directed exchange capabilities. In terms of data integration a number of people who I spoke to came back and said we're basically nowhere right now on that, except with specific transaction streams such as ePrescribing and labs, which we'll talk about, within EHR networks, such as within EPIC, within eClinicalWorks certainly they have that level of capability. And then with sophisticated implementation such as Healthway, but those are very specific, you know, sort of channels across the market and don't speak to the ubiquitous ability to do it, you know, which is certainly going to be, you know, part of the challenge as we move forward.

So, let's just walk through these, you know, and really just to give some information. I'm going to walk through some of them more quickly because I think people are familiar with them and there isn't that much more to say and then some where I think there's a little bit of new information or not new but more specific information that might speak to where we are and one of the things I tried to focus on is, and I'm as guilty of it as anyone, is, you know, we tend to speak of Meaningful Use Stage 2 because it's been approved and finalized, as being done. Okay, so whatever was in there it's done, it's in the market.

And, as we're going to see, you know, it's far from done and there's a lot of work to do just to get, you know, us in a position where we can have organizations seriously thinking about Stage 2 let alone, you know, considering it done. So, you know, certainly at the highest level of national HIOs we have Healthway which, you know, as many of know are now spun off to a nonprofit, a lot of growth prospects there something like 90,000 transactions conducted and, you know, HIE solution, full-blown solution based on NHIN standards in some ways like that HIE 1.0 model that has a lot of richness to it and a lot of, you know, full set of capabilities for those organizations that are able to, you know, to implement it and are able to take on the policy and the legal side of it as well.

You have the Care Connectivity Consortium which is 5 large provider organizations sort of more in a demonstration project kind of mode moving to production not quite as wide-spread as Healthway but certainly at a national level demonstrating, you know, full-blown HIE capabilities across organizations. I think people are going to be here from Healthway and the Care Connectivity Consortium later to talk about those two efforts.

If we're going to move down one level to sort of state level and regional HIE collaborative activity what I've done is taken some data here from the ONC dashboard on HIE and looked at...on the left-hand panel you have Directed transactions and what is being reported by those 56 funded activities who are getting HITECH funding for HIE in terms of the number of Directed transactions and I've normalized it to monthly transactions. So, you can see Indiana something like 14 million Directed transactions per month and you can work your way down.

Something like 42 of those HIE activities had fewer than 100 monthly. So, you've got a lot up at the top doing a lot and then it drops off dramatically. Again, you know, we're moving forward but...and it takes a while to get this done. And when you look at query transactions, you know, sort of similar, a few leading state activities and then it starts to drop off with something like 37.

On the right panel what I wanted to show is that there are also some mature HIE activities that have been around for a little while that by themselves have a large number of transactions. Now IHIE the Indiana Health Information Exchange those numbers may be included in the Indiana numbers. So, you can see there is startling similarity between those. So, you know, one of the things to note there though is that that's an existing long-standing ability, right? So, it takes a while for some of this to, you know, really mature and come into place.

But you have HealthBridge, which is not included in this data clearly and Keith Hepp is here from HealthBridge who is going to be talking later. You know, they're doing 3.2 million Directed exchanges per month. So, they've got relatively high volume and then you have NEHEN the New England Health Exchange Network that hundreds of millions of administrative transactions but doing easily over 200,000+ Directed exchanges per month.

So, a number of HIE activities both HITECH funded, as well as those, you know, who have existed for a while with, you know, different deep pockets of activity there.

These next few slides I can move through pretty rapidly I think, because, I think everyone is familiar with where we are in ePrescribing, it's certainly been the topic of the Policy Committee, the Standards Committee and I would, you know, say that I think we would probably all agree that in terms of success stories, electronic prescribing is, you know, far and away one of the biggest HIE success stories that we have in terms of the number of users. I mean, however you cut it the number of users...did I do something bad here? Oh, here we go, the number of users, where we are with respect to pharmacy infrastructure and pharmacy enablement and prescriptions.

So, you know, a lot of success there, a lot of growth over time and a lot of great value delivered, but there are certainly gaps that remain, especially, vexingly in the largest states. So, you know, what you see is California, Texas, New York and Florida have been, you know, the states with some of the biggest gaps and some of the biggest issues which, you know, just sort of speaks to the fact that there is still work to be done.

What are some of the causes of some of these ePrescribing gaps? Certainly the controlled substances issue, you know, which I think is, you know, now resolved or, you know, close to it, but that, you know, has led to part of it and you have sort of a bleed over effect with controlled substances not just when I'm prescribing that substance but if I'm prescribing something that has a controlled substance and two others which aren't controlled substances all three end up not entering the ePrescribing channel, you know, for workflow.

Prescriptions not suited to ePrescribing, patient preferences, misconfiguration, physicians thinking that they're ePrescribing but they're actually faxing, you know, you've got all of those issue and then we certainly still have the ePrescribing dead zones. We don't have, you know, uniform, ubiquitous, homogeneous capability of the infrastructure across the country and I think we're all familiar with that. The work is happening and I think that, you know, as we see the numbers they seem to be plateauing in terms of the growth of the adoption utilization which is, you know, suggestive that we've got, you know, maybe not fully plateauing, you know, but a lot of the hard work has been done not to say that there isn't more to do.

If we start to look though one level down now and look at the EHR vendor networks, one thing that's a very interesting development I think in health information exchange is that within the EHR vendor network, which is customer to customer on the same platform, explosive growth in health information exchange, right?

Now some people may not think of that as health information exchange because they're on the same platform, if I'm a clinical entity and I happen to be on EPIC or eClinicalWorks or Cerner or Allscripts whatever it is I don't care that the other organization is on the platform it's health information exchange because it's a different clinical entity, it's a different legal entity with a need to exchange.

So, you know, going down this quickly, what you see is, you know, a lot of, you know, growth and I just picked, you know, three organizations that have a nationally high penetration. I mean, one of the issues here is that, you know, which vendors have enough density, enough penetration in the market that you would see that any particular market they may actually find that, oh, it's two or three main, you know, other entities who actually exchange patients which happen to be on the same platform, that isn't true for a lot of vendors just because of the way they've penetrated the market, but certainly with EPIC a large majority of customers are participating in their core e-based exchanges.

Many people know these numbers, but something like 2.2 million records for almost 400,000 unique patients are exchanged per month and this is CCD, CDA records, per month across legal entities on the EPIC network and that volume has doubled over the previous year, and that interestingly does not include HL7 Directed exchange transactions, right? That would add just, you know, millions and millions, tens of millions of transactions to that.

So, there's been a lot of growth there. You look at eClinicalWorks sort of a similar story, you know, approaching 20,000 providers using query-based exchange, 2.5 million new CCD records made available on query exchange hubs or sent directly to referral providers across legal entities per month and just looking at the lab result side they processed over 75 million in 2012, so a lot of health information exchange happening there.

And then finally, Cerner, again a similar story, 1.5 million query-based exchanges per month with something like 58, you know, almost 60 million Directed exchange transactions per month that includes HL7 lab results delivery. So, a lot of HIE activity happening within these networks. Obviously it only suits certain environments where the EHR vendor happens to correspond with the people that I want to trade with but in those cases there is a lot of activity there.

As we turn, move one layer down to enterprise level HIEs you see a lot of activity around value-based purchasing initiatives that are driving creation of enterprise level HIE infrastructures and whether that's, you know, accountable care or patient centered medical home, or you know, hospital readmission penalties there seems to be a lot of drivers of that but a lot of activity and there's been a lot of, you know, market assessments from Chilmark and KLAS, and a number of others who have pointed to the growth and what they're calling private HIEs.

Sometimes these are enabled by vendor specific networks, obviously in markets where the major clinical entities are using the same vendor, but often times, you know, very few vendors have enough market penetration to make this feasible so you're starting to see, you know, what might be seen as kind of that HIE 1.0 kind of model of I've got 3 or 4, or 5 vendors that I need to connect up my hospital for a very specific purpose and to create some fairly rich applications.

So, we're seeing a lot of IDNs and hospitals spearheading technology enablement of a value-based purchasing model, really building very rich functionality in that HIE platform, almost in that 1.0 mode to perform functions essential for risk management for value-based purchasing. They're more nimble which makes the model work at this level because they don't have the same collective action kind of constraints that happened at a state or regional level when you try to do this collaboratively. They're designed to solve very focused business needs. Sustainability is not a barrier to progress yet, because it's often funded by the hospital IDN and they're building to fit within constraints of law and business practice.

So, if we're going to move...I'm going to keep moving quickly here and get down to what we might think of point-to-point and this is where, you know, it starts to get...you know you start to describe almost every kind of thing that could possibly happen down at the, you know, down at the bottom level. Certainly the idea of a point-to-point transaction would be that it would require no third-party coordination or orchestration, that basically all of my technical, legal and business issues got resolved between me and whoever it is I'm trading with and I don't need anyone else to help me with that.

The vast majority of HIE traffic occurs as point-to-point transactions today and it's really namely lab results delivery, and as Dave McCallie and I were just talking before, the majority of those, as we'll see in a second, are actually fax deliveries, that is the major form of health information exchange happening today is electronic fax.

Direct has a lot of promise but it's obviously not proven yet and a lot of that will depend on how the EHR vendors, in particular, implement Direct per the Meaningful Use Stage 2 requirements and that will really determine I think whether this is, you know, sort of paradigm breaking or becomes just another standard. I think there's a lot of hope that it is the former and not the latter, but we'd need to see how it gets implemented to really see.

And then, you know, one person I spoke to said, you know, the extreme of this is if Rishel and McCallie are right, you know, Direct transactions are really asymptotically approach point-to-point architecture and really shrink the need for intermediaries. In the short run what we're seeing right now, and again, it's very nascent, so a lot of, you know, there's a lot of business practice and a lot of technology kind of issues need to be resolved. We do see that the role of intermediary HISP is, you know, is still taking shape but it's not like they've merged into the background at all and certainly this question of trust is, you know, first and foremost, you know, in that conversation.

The visual integration part of point-to-point is a very fast-growing type of point-to-point HIE. I talked about that before, I won't talk about it anymore here, but, you know, happy to answer any questions. One other note that I would note here in point-to-point, I didn't put it on the slide, is, you know, Surescripts has a network as well and one of the things that they've found, in the way of, you know, thinking about where are we with respect to the spectrum of data versus visual integration. They, you know, received last year in 2012, 1 million CCR records from retail clinics in the pharmacies and delivered them to point of care, the vast majority they had deliver by fax or paper.

So, they are receiving it as structured clinical but they have to deliver it as fax and paper because the receiving systems are not able to receive structured clinical, same with immunization reports they get something like 2.2 million in 2012 they got from pharmacies and they have to deliver the vast majority of those to the point of care as fax or paper. Getting better over time but, you know, as described as the vast majority right now are still on that. So, there's a lot of work to right do now with the things that we're trying to do right now.

So, one thing I just want to talk about in a little bit of detail here, and how am I doing? Okay, is the lab market, because the lab market is very different than the rest of health information exchange and why is that? First and foremost because it's highly fragmented and so, you know, what you have here is just a picture of the lab market itself, which, you know, Quest Diagnostics and LabCorp sort of have similar estimations that something like 60% of the clinical lab market is actually performed by hospitals, 33% by commercial labs and then something like 7% in physician office laboratories. If you look at the numbers of labs, which I have there on the right, you can see that there are a lot of labs in each of those categories, a lot of labs, a lot of labs.

The fragmentation may be indeed be increasing by a lot of people accounts, because hospitals are trying to increase the lab business to offset revenue decreases, so, in some ways, you know, increasing the fragmentation and making the problem more difficult. Fragmentation makes it incredibly difficult to generate collective action for a national lab network, for example like Surescripts. You think about, you know, 60% of it being delivered by hospitals, it's not like you have, you know, a few key players who can bring it together. By, you know, this count LabCorp and Quest are something like 20% of the overall market.

Meaningful Use is the only...is really, right now, I would argue the only industry-wide force driving standardization of lab results delivery and the high fragmentation of the lab market makes it even difficult to measure progress of these electronic transactions. ONC is now fielding a lab survey to try to get at some of this data, but it's vexingly hard to get.

One of the things that I did was reach out to a couple of very specific vendors because they have some unique perspectives on this that might at least give us a little bit of a snapshot of what might be going on in the lab market, particularly as we think about where are we with respect to growth in electronic transmittal.

So, first was Cerner. So, as you know, very large vendor, hospital systems and the question that I had asked them is what percent of all the lab results that get delivered from your customers are HL7 interfaces, whatever form of HL7 versus paper or fax? And, they delivered something like 585 million lab results per month from their systems and 10% are delivered via HL7 interfaces, 10%, 90% are paper fax today. Right, kind of an amazing number when you think about it and, you know, as David McCallie and I were talking about it, it was looking at that data that was the inspiration for saying we need to figure out Direct, we need to figure out something else to move us beyond fax, but, you know, it's kind of an amazing and startling number.

Certainly, there's progress, but interface implementation is a significant barrier to progress. The lack of standardization and competing priorities makes it very hard, it's not like the technology can't do it, it's that the hospitals in particular have a hard time getting it done amidst all the other priorities they have.

Meaningful Use Stage 2 may not be enough to spur...to significantly increase electronic delivery, in part because it doesn't require electronic delivery and standardization of electronic delivery is a menu set item right now. Now, I know, you know, there are lots challenges with that but just, you know, in terms of trying to attack the most difficult part of it, it maybe that that's where we need more of the levers than we have today, because we can't depend on other parts of the market to push it quite in the way that other types of HIE have progressed.

So, the other thing that I looked at was Athenahealth also has an interesting perspective on this, why do they, because if you ask an EHR vendor right now what percent of lab results are delivered to you electronically, well the answer is, well 100% because that's kind of the only way that they get lab results is if there is an HL7 interface setup. So, in some ways they don't know the denominator, they know what they get.

Athenahealth is the one vendor who is very different because they actually make it a part of their business to get all the lab results for a customer to actually get the fax stream and then try to process that for the customer. So, they provide a window, you know, a sample, a small sample of what might be a cross section of where the industry is on this.

So, in the data they had suggested that 62% of the data that comes to them comes via HL7 interfaces and, you know, 38% roughly not. Interestingly it's a small set of labs, so there's something like, you know, 7900 labs that deliver to them, it's 600 labs that account for the HL7 interfaces and then you have the remaining 6800 labs that are delivering via some combination of fax, paper, proprietary portal what have you. Why is that?

A small number of...you know, they have the large effort required for interface development that's both on the lab side and the EHR vendor side as Athenahealth themselves report, you know, we can't get to all of the lab interfaces that the labs are capable of delivering to us, so that's just one part of it, and that will take care of itself over time, but just speaks to difficulty of doing that and how much work it takes.

The other is that large practices have higher lab interface rate than the small ones because the commercial labs in particular don't cover the cost of interfaces to small practices because they don't see that it's worth the investment to them. So, that's a significant barrier. And, you know, I don't know how we resolve that but, you know, it's a strict business decision being made but it's just the reality of the way the market is, you know, sort of unfolding there.

So, what's the last piece of this? Interesting other perspective is in LOINC mapping capabilities. So, how many, what percent of the labs they get are actually LOINC encoded, something like 24% by their report of 29 million lab results that they examined for this analysis, but it was only one lab that was sending those.

And of the 599 other labs who were sending it, it was with proprietary codes. They did note that there was another national lab that could send them LOINC data and it was just a function of the contract that they were in. So, you could perhaps, you know, bump that up maybe I don't know what the percent would be, but it would be two labs, the two national labs who were delivering LOINC codes and everyone else, literally everyone else delivering only proprietary codes.

So, you know, again Meaningful Use Stage 2 may not provide enough of a spur so that could be a part of the conversation, that's how we think about that going forward, particularly when you think about the, you know, variation in public health requirements, competing priorities, what have you.

So, you know, in terms of the patients, one last point here, sorry MacKenzie, are you okay? Okay, you know, EHR vendor patient portals, again the EHR vendors, you know, as we think about, you know, patient portals and the patient engagement part, the patient portals are, you know, racing ahead, the tethered ones with the EHRs, eClinicalWorks has over 8 million patients in their portal, over 16 million secure message transactions between patients and providers last year.

Similarly, EPIC, EPIC doesn't release patient portal information per the contracts that they have with their customers, but Kaiser alone reports 4 million patients and over 13 million secure e-mail transactions. So, there's a lot of activity happening in the patient engagement world, but again, through the lens or through the channel of the patient portal.

The patient control applications like a Health Vault for example aren't able to get large traction without greater impedance from the provider and the EHR vendors; they can only deal with the data they get. Some organizations like Beth Israel have automated the ability to upload into Health Vault but that's much more the exception than the rule and maybe an exception of one or two for the most part. Health Vault certainly has over, you know, 1 million customers, there is that ability and certainly Blue Button, and Stage 2 Meaningful Use may open the door for greater demand from providers and consumers for that, but, you know, again this may just be a transition issue but we need to see how the market unfolds.

So, let me jump ahead then to just the final slide, you know, what are some of the conclusions from, you know, some of these conversations I've had, one is that HIE activity is really starting to flourish from the bottom up and that's really good news I think for all of us. Heterogeneity I think more than anything else it seems is going to be the Hallmark of HIE activity in the coming years, when you think about that spectrum and you think about what's going to be the dominant model I don't really see that, you know, that we need to think of it in those terms, because I think every model is going to have its use and that's what we're probably going to see for a long time.

And, you know, you're going to start...and it seems, you know, if it starts to follow, you know, other practices and where it seems to be headed right now, you know, kind of multilayered HIE modes that seem to be developing as business practices mature, some along the lines of what we might think of business-to-business style patterns that just is about moving documents around with little or no centralized coordination. I just need to be able to move documents back and forth to serve particular point-to-point needs.

And then more of supply chain style patterns that...you know, for example like you see in the auto industry with supply chain where you have deep integration among very closely aligned entities that are seeking centralized orchestration for rich applications to support complex uses like the private HIEs that we're starting to see bubble up and you may see both of those, you know, co-existing, there is no reason that you would have one over the other.

You know, with Meaningful Use Stage 2 and CMS ACO initiatives it seems that the seed that has been laid to allow many HIE areas to proliferate on their own and allowing the market to develop norms and business practices around many of these things maybe the right, you know, the best thing that can happen from a policy perspective right now.

There are three areas that seem to come up over and over though as areas where some more policy and standards maybe needed to spur more market innovation and one is around the labs. The organic motivation for standardization is very difficult in the current market structure and as I described we're really just, you know, have not moved very far in the ability to have that be more electronic.

Lightweight Directed Query, the ability to have cross system query without having to deploy elaborate legal and technical infrastructure, which is not criticism of connect or that type of infrastructure it's just to say that if that's the only answer it'll take a long time for us to be able to have that kind of query and I know Wes Rishel has got the blog just waiting to kick off the Directed Query, you know, set of standards, but that I think is really a fruitful area that there seems to be demand for.

And then finally, you know, I would argue that the ability to have eMeasures and eCPOE which is basically enabling enterprise level dispersal of measure and decision support algorithms to give levers to ACOs, basically having an EHR that can consume those from the outside and be able to do good stuff with them so that they're not having to, you know, make it up all on their own.

One area to keep a close eye on is the highly constrained core data set and exportable, importable C-CDA. Meaningful Use Stage 2 certainly defines this and that could be enough, but if it doesn't happen then it maybe that we need to circle back and see what more we need to do there, but it could be that there's enough there for the market to grab onto and run with it.

So, I apologize mostly to MacKenzie who is trying to keep the schedule here for going a little bit over and welcome any questions or comments people have.

MacKenzie Robertson – Office of the National Coordinator

So, realizing how important his presentation was I didn't want to shorten any of his time, but we do have panel one, next so if there aren't any questions we just switch to panel one unless there are questions that we want to...Wes?

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

It's always the same old hands. Micky, that was great.

Micky Tripathi – Massachusetts eHealth Collaborative

Thank you.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

And blunt too, which I think was very valuable. Certainly the notion that we can rant and rave, and wail all we want about interoperability until somebody needs it and then when somebody needs it we don't have to work half as hard is true. And the change in incentives are driving very much a need for interoperability.

Carry the picture you've described forward, which I think we have no choice but to do, where interoperability is introduced by the ad hoc requirements for specific ad hoc business issues and look at the trending in organizational growth around the accountable care, just to pick a tag to put on all of the reimbursement approaches, I kind of view practices as being in one of three categories.

Number one they aren't going to be impacted by accountable care. Number two, they will become so closely tethered to one accountable care organization that virtually all of their patients will be treated through that organization. And number three is they will provide services to multiple accountable care organizations.

Clearly, anyone who says they're number one I tell them pick one of the other two and I think primary care and some specialties, particularly where the physicians are employed by the ACO fall in number two, but I live in a rural county and I know where I live, you know, we're glad to have one vascular surgeon, we're not going to get several to several ACOs.

What happens to that physician when every connection to the EHR is ad hoc based on specific business rules by the organization that makes the connection and does that in fact become a factor in the business success of accountable care organizations, their ability to deal with various physician practices, how does it look from those two sides? It's the question that keeps bugging me about the trend we're seeing.

Micky Tripathi – Massachusetts eHealth Collaborative

Yeah, I think it's a great question and speaks to just the messiness of the world, right? That is, you know, as much as we like to sort of have clean slides the world is just a very messy place and particularly health care has every possible variation you can think of and variations that you couldn't possibly think of. So, in that circumstance I don't know if there's a single answer to that.

It maybe that in some places you have, you know, and Massachusetts might be one example, where you have a state level HIE organization that can provide dial tone services, which is that the statewide HISP that would provide sort of dial tone-like services that could be that backstop to allow that specialist who really needs to be part of four accountable care organizations have at least that functionality across them or if Direct really gets implemented as, you know, Wes and David want it to, and that they would have that, you know, that ubiquitous cross vendor universal ability to send and receive Directed messages across those and maybe pick where they want to, you know, enter into a more rich relationship as well. I mean, they're going to have multiple relationships. I mean I don't think that they're going to have a single one to resolve that.

The other maybe that you have it coming from the other way, from a private HIE that itself thinks of layers and, you know, we're working with one in the Western part of Massachusetts who is kind of thinking about it in that way as well, that they have a certain set of organizations who they want to have very rich trading relationships with and then some who they have a less, you know, sort of deep tie to and they'll figure out some kind of Directed messaging kind of approach with them either leveraging the statewide HIE or whatever they're building locally that will provide some tether to them but won't be, you know, sort of the rich keys to the club that they're allowing for some partners. But, I don't know that there's...there's not a uniform solution I don't think.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

So, we might conclude that the messiness extends to the ability to run the business, that in fact some ACOs may have a different level of precision with dealing with some physicians then dealing with others because of...

Micky Tripathi – Massachusetts eHealth Collaborative

Absolutely.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Okay, thanks.

MacKenzie Robertson – Office of the National Coordinator

Are there any more questions for Micky? Okay.

Micky Tripathi – Massachusetts eHealth Collaborative

All right.

MacKenzie Robertson – Office of the National Coordinator

With that Micky, thank you so much.

Micky Tripathi – Massachusetts eHealth Collaborative

Thanks for going easy on me, thank you.

MacKenzie Robertson – Office of the National Coordinator

And, I'll go ahead and set up the name...for panel one, so if the panelist could please come up to the table.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

...okay, see once again, Micky and I came to town through snow and sleet and storms, and we got here on time. So, we love coming to Washington.

M

...

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

It is, it's freezing rain and sleet, always a pleasure. Well, while the panelists are getting seated let me just talk, there are a few remarks of introduction. So, we had some very elegant commentary from Micky, I really enjoyed the way Micky you started with the simple point to patient and then progressed all the way to the national level HIE collaboration looking at the degree of coordination infrastructure required.

So, this first panel is going to look at a number of success stories. You'll hear from leaders in the HIE space, the early adopters if you will, as to what technologies and policies they've implemented locally. Each of them has a different architecture, each of them have different sets of policies and different experiences. So, especially I look forward to hearing what worked but also what not worked and where are the gaps in policy and technology, because today is really I think informing both our committees, Policy and Standards what additional work we have to do in the future so we empower not only you but everybody else who wants to learn from you.

So, let us start. The way this panel will work is we have 25 minutes for prepared remarks, so 5 minutes per person, followed by 50 minutes of discussion, and certainly I know the Standards Committee is never shy, I'm sure Paul the Policy Committee is never shy, so we'll fill those 50 minutes. We're going to hold all Q&A until the end of the initial prepared remarks and then have at it. So, let us start with Michael Lee who is with Atrius Health and has done many exciting interoperability activities in Massachusetts. Michael?

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

Thank you all. My name is Michael Lee, I'm the Director of Clinical Informatics at Atrius Health and very happy to be here with you. And what I chose to speak on today was really about basically the why we're doing this and what drove us to make certain decisions with our exchange efforts. You know, if we look at that AAA and right we're trying to reduce cost, improve population health, improve patient experience that's great and then we also...we are a pioneer ACO, so we have emergent needs to reduce expense and improve quality over a very short period of time.

We also have a long history of partially prepaid and partially fee for service healthcare organization, so we have a blend of payment structures. We're all ambulatory, so all of our interfaces with hospitals, we have about 30 hospitals that we deal with and multiple visiting nurse associations, home health care agencies, etcetera, and so we took a track that if we had our targets we had to reduce expense, especially hospitalization expense, we wanted direct admissions to cost effective providers, we want to be aware of what's happening with our patients as they move through the health care system in Massachusetts and be more aggressive with ambulatory interventions to reduce hospitalization and reduce risk in patients.

So, you know, while we have some relatively primitive efforts in exchange of full clinical information one of the first things we did, as Micky mentioned, was around view access with John's Hospital, Beth Israel Deaconess Medical Center, which enabled us to, directly within the electronic record, look at a patient's medical record at the hospital. The popularity of that was unbelievable amongst clinicians, to be able to click a button within 10 seconds have basically a view summary of everything that occurred at a hospital event for a patient was really dramatic in our organization.

The amount of delay we see with communication of clinical summaries, ER notes, discharge summaries, referral provider notes all those kinds of things made it just a phenomenal success organizationally around that. So, I can't underscore enough how important that has been to us organizationally.

Recent steps that we've done is we've taken all of our hospital transactions and we're loading them into EPIC so that we have a real-time hospital database visible within EPIC and what that enables us to do is as a care team manager we can see on an individual patient level, a risk patient level all the hospital transactions that have taken place in our extended network.

And I thought it was an important question you asked about, you know, if a provider doesn't line up with an ACO what's going to happen with them and the truth is the patients go where they want. Unless you're going to make it a closed system, you know, Kaiser is essentially a closed system so they can retain patients fully within their network, but unless we go back to sort of the HMO closed network in a lot of market areas the patients will choose where they want to go.

So, just because we want to strategically ally all of our transactions say where BI is our primary tertiary provider, I think 60% of our inpatient business is not at the BI. So, we can't meet that business need for our organization simply by relying on an ACO closed network transaction. That's why we've chosen really to go in a multiple layered approach.

So, what these two tools enable us to do, the view, access and the hospital database is enable us really direct all the follow-up from hospital care to include home care, telephone calls and reduce the risk for potential readmission for our patients. And then we're also...we can use this data and use the transactional data to stratify risks for our patients internally so that we can look at panels of patients and understand who needs more aggressive outreach from us and in what time period. So, those are the primary goals of what we're trying to accomplish with the exchange.

Now, the problem is like all electronic information it can be overwhelming. So, if we took every transaction from our hospitals and notified providers every single time a change of event occurred for a patient that's just too much for our providers, they don't want to see the note from the ER then the transition to the admission, then the transmission from one service to another, then we can send them all those transactions. So, we're trying to segregate those into what our care team needs to know and what our providers need to know on a directed basis, so, understanding the value about notifications that they can be overwhelming as far as that goes.

And the question is, do we need to store...how much do we need to store in our EHR as well as what we can view is a complicated question. One of our groups has chosen to take a near hospital and import all of their hospital data into EPIC so it's available for providers at the point of care, but that ends up overwhelming your system with a lot of data providers will never, ever, ever look at.

And so we've taken a sort of partial approach that we believe that certain documents like discharge summaries really need to be in the record and be accessible, but a lot of the other hospital information can remain at the hospital and be viewed, accessed on an as needed basis, when the patient is in the exam room with you or when you're doing a review of...a roster review. So, that's a very important transition for us.

And, I think the biggest piece that we're looking at now is the ACO models, the transition of care to home, you know, it's the 99% of the patients care existing outside of our practice, outside of John's Hospital, outside of any of our networks and trying to get access to our Visiting Nurse Association to...we just allied with a Visiting Nurse Association as part of Atrius Health, but obviously we're going to have other Hospice Associations, other home care. In terms of trying to reduce expense and improve the experience for patients outside of our network we really have to be able to do that.

It's too early really to assess the value of all that. I guess the primary point I wanted to make is that we talk about health information exchange and technology as meant to reduce the cost of healthcare overall, really this is a tool and it's really the cultural and operational changes that we have to make as well as the financial models that are going to reduce expense. None of this investment is really...are we able to categorize as a return on investment in some specific identifiable way without all the other pieces. So, that's really the point that I wanted to make and I look forward to all your questions. Thank you, very much.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great, thanks, Michael, very well stated. In Michael's case, they use EPIC, I have some home-built systems, we'll be talking this afternoon about trust relationships and in fact Michael said he trusted me, I said I trust him and now our clinicians on either side of our two systems can view 100% of each other's data. Push, pull and view are the sort of architectures you outline and this is a good example of how we've been successful with view. So, Sandy, let us hear your remarks, you see that's the timer that is ever vigilant, but you guys have made some great remarks so far, so please go ahead.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

Thank you. Thank you for inviting me to speak today on behalf of the Camden Coalition of Healthcare Providers. I'm going to read more than I usually like to, because I don't want to get the numbers wrong and my font is 16 point and I still think I need you to like hold it back there for me. I'm in denial of my age I think. So, my name is Sandi Selzer, I'm the Director of the Camden Health Information Exchange for the Camden Coalition for Healthcare Providers.

The coalition is a 10-year-old nonprofit grant funded organization that's vision is to bend the cost curve and improve quality in Camden, New Jersey. Camden is a City of 77,000 people one of the poorest and most violent cities in the country. In 2011 2.5% or 1734 Camden patients resulted in just under \$43 million in hospital receipts. The top 650 of these patients had three or more hospital visits and six or more ED visits in one year. They also had 1054 thirty-day readmissions or an average of 1.6 readmissions per patient. The coalition targets this population and the Camden HIE is really the foundation of our work.

The Camden HIE launched in 2010 as a basic centralized community-based HIE, contains ADT, lab, radiology results and discharge summaries from three fiercely competing hospitals in Camden. The HIE portal is used by hospitals, physicians, nurses across Camden and also is used by the coalition's care management staff to track and identify, and track and coordinate care across Camden.

Each morning the HIE produces a report from using just ADT data that lists Camden residents who have been admitted to hospital in the previous 24 hours and who meet the coalition's criteria as a high utilizer, which means they've had two or more inpatient stays in the past six months. An average of 250 high utilizers is generated per month from this list from just two hospitals in Camden.

After excluding those with admissions related to oncology, pregnancy, planned surgery, late stage progressive chronic disease, and mental health only diagnoses 40% of the list remains and the coalition's care management team then engages those patients in our care management program, which is a high touch clinical and social support intervention designed to re-engage patients with primary care to keep them out of the hospital.

Now, this year the coalition's goal is to provide these types of utilization reports across Camden, to the providers across Camden, practices across Camden giving them a macro-level view of their patients that can be used to act not just react to their patient's healthcare issues.

With simple ADT data a community-wide HIE is a powerful tool that can provide physicians with real-time and high level utilization reports across healthcare systems, 18% of the high utilizers that we identify in our daily report visited both hospitals and 50% of those would not have been identified as a high utilizer by one of those hospitals, they weren't there enough, they bounced around to different hospitals too much.

The coalition agrees that real-time data and alerting to a physician of an ED or discharge is critical in reducing waste and improving quality. We also agree that access to clinical data during a hospital visit is critical, but we believe that HIEs are in a unique position to transform care by providing physicians with ongoing high level data about their patient's healthcare utilizations so they can prevent unnecessary ED visits and hospitalizations.

So, a couple of the barriers that we're seeing as a coalition is data, you know, we're all working for standards, to standardize the data going across into the HIEs, however, hospitals need to address the data entry issues. Free text or no information about primary care provider at registration is not acceptable if we're going to improve post discharge care. Discharge summaries that take 1-2 weeks for dictation and sign off are not acceptable if we want to improve post discharge follow-up time.

Another barrier is governance. The Camden HIE was created with the support and data from three competing hospitals because Dr. Brenner spent 6 years earning their trust, that model isn't scalable or practical, we need to create governance models that allow hospitals to feel safe signing trust agreements, sharing data and reaping benefits of the HIE. Thanks, again, for allowing me to share our story and provide our recommendations.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great, thanks very much Sandi, now if I recall, isn't Campbell Soup headquartered in Camden? So, HIE is good food.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

Yes.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, Keith, look forward to your remarks.

Keith Hepp – Chief Financial Officer & Vice President – Business Development HealthBridge, Cincinnati, Ohio

Thank you much. Keith Hepp with HealthBridge, I'd like to thank the committee for inviting us to be here today. Mark Twain said when the world ends I want to be in Cincinnati because everything happens 20 years later there and that's very much a true statement except we've been exchanging data for over 15 years now.

So, we started years ago before there was Meaningful Use, before there was ONC and the community as a culture decided that for the good of the patient that exchanging data, having data where it's needed for the patient at the time the patient needs it was something culturally that we were going to do. So, in our region we're doing the pivot that Micky talked about, the 2.0. So, we're pretty much all in when it comes to value based pricing as a community. We have over 100 level III medical homes we're a comprehensive primary care initiative site. From a technology perspective we're putting all of them out there, we're big believers in the CDA. We're a HISP, we're live on connect, we use HL7.

So, what we have found over time and what we think is important is technology is great but business drivers need to select the technology not the other way around. So, in our world we are the deploying all those technologies based upon what the business case is. A good example for Direct is there are still plenty of participants especially in a value-based world that are not on an EHR. So, using Direct and doing ED alerts in a similar fashion we already get ADT messages, we already know someone has been into an ED and so what we can do is take data put it into Direct and put it to someone who's not in an EHR liking nursing homes, visiting nurse associations and other folks like that.

So, we're new, we're relative...this is a relatively new, we were very much exchanging data, you know, electronic from a percentage perspective as far as five years ago we were 90% electronic for what we exchanged. We also do the fax printing for the community, we were already 90% electronic and that's lab, radiology, it's the whole group of results.

So, as we look forward to key things that we're looking for as we pivot, it echoes some of the other comments that exchanging data and one of the advantages of Meaningful Use Stage 1 and Meaningful Use Stage 2 is that the transactional cost, getting a piece of data from one place to another is significantly reduced, we're big supporters of that.

What we're doing is looking at how on a community basis we can support those who are taking risk. To Farzad's point we don't want to bump up against anyone's business plan, one of the things that we learned was through Beacon we have translation tools, we have registries, we have a repository, really a master association index, who is this patient touching not just doctors, but also do they go to the Kroeger or little clinics and get a flu shot.

So, we deployed those tools and some of the things that we learned was putting in front of plans, physicians, health systems here's a platform that you can use was too much and so we first rolled that out and said we're doing this for Beacon and this is...it does all those soup to nuts. What we found was that we were starting to bump against people's business plans. So we started disaggregating it.

There are some people who need to organize it into a repository, we can do that. There are those who really just want to be able to track patient care across the different healthcare systems as they go across, we can do that. So, one of the key things that we determined is we need to make sure that we're using health information exchange to support business processes and not bump up against someone's business model.

Lastly, key challenges that we have continues to be extracting data. We're making, as a country, a great deal of progress in getting information out in order to put into a registry or do disease protocols but even with standards it is still very difficult to get the data out and as implemented health systems who have even the same system, and we have many that are on EPIC, as implemented many of those coded data are coded differently. So, from a health information exchange what we're interested in doing is assisting those and identifying the patient, coding the data, translating and reporting more appropriate. So, thank you, appreciate the opportunity.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

And 8 seconds to spare, very well done. So, Keith certainly describes activities that have been going on from very early in the evolution of 1.0 and so I think what you've done in your community like each of you have described is really identified the value cases to the community and hopefully as we go through the day we'll hear about the technology and policy activities that will not only work in your community but all communities. John Blair?

A. John Blair, III, MD, FACS – CEO - MedAllies

John, can I ask for his 8 seconds back?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, go ahead.

A. John Blair, III, MD, FACS – CEO – MedAllies and President - Taconic IPA

All right, good morning, I'm John Blair I appreciate the opportunity to speak to the committee and thank you for your invitation. I offer the perspective of a health care and technology executive who has spent many years in clinical practice. I am the CEO of MedAllies a health information service provider company and President of Taconic IPA a 5000+ member physician group, both are based in Hudson Valley of New York.

In my MedAllies world I have extensive experience with Direct, as this panel knows the Direct Project is a collaborative effort championed by ONC to improve the transport of structured and unstructured health information across disparate EHRs. Importantly, it supports providers as they strive to improve patient care and meet Meaningful Use requirements. MedAllies has been involved with the Direct Project since its inception.

In New York we've been working on two parallel paths and those two paths are now colliding. One path is our practice transformation efforts around patient centered medical homes and now patient centered medical neighborhoods. Because of these efforts Taconic IPA shepherded numerous practices more than 500 primary care physicians to NCQA level 3 patient centered medical home recognition.

The second path is our work on EHR interoperability and more recently the use of Direct protocols to achieve that interoperability. Our practice transformation efforts are moving out of the individual practice and into the medical neighborhood just as we're moving Direct into a market offering. We see tremendous interest and demand from advanced primary care practices and the specialists they work with for this interoperability.

We're also witnessing an increasing interest from hospitals around care transition, the interest is driven by the 30-day readmission penalties, ACOs and other care coordination projects in our region, we're one of seven regions that are doing the CPC initiative with the innovation center at CMS.

As we move our Direct efforts from a pilot program into a statewide offering which went live last week on the Statewide Health Information Network for New York we recognize that interoperability must be more than sending medical e-mail to inboxes. Interoperability demands true EHR integration, integration at the point of care and needs to be consistent with the provider's workflow and their clinical space.

What we found being involved in health information exchange for more than a decade and with Direct from the beginning, is the technical integration required for Stage 2 Meaningful Use is not the real issue. The vendors are ready for that to a great extent. The current technology addressed in Stage 2 will work, this is not the heavy lift, in fact it's eminently interoperable we believe.

To the degree EHR vendors are paying attention to the utility of their systems for transitions of care, that's referrals, consults, discharges, etcetera, they will meet the needs of providers. We're very confident there will be widespread use and a marked uptick in interoperability. Our belief is based on two years of work with providers across multiple care settings who have shown interest in these capabilities and a strong satisfaction with what they've demonstrated with their usage.

Instead, we believe the real issues relate to the technology...I'm sorry. Instead the real issue relates to how technology serves the provider. We've discovered that the user interfaces within the EHR vendor technology currently does not anticipate full clinical interoperability around transitions of care. This gap is understandable because enter system EHR interoperability has not been available in the market to date. In addition provider adoption and usage of EHR technology was not previously at a level in the market to justify provider reliance on the EHR as a communication tool.

The issues with which we must grapple are functionality of the application for providers and its clinical relevance, along those same lines I want to mention the move to 2 factor authentication. We need to be mindful of the impact that this will have on provider workflow. The EHRs becoming the access point for many networks, EPCS, Direct, HIE query, so for example will the providers have to authenticate at each transaction or will they have to authenticate when they enter a session using the EHR for the morning or the afternoon when they're using their system.

The two approaches could have a markedly different effect on providers and their resistance or lack thereof. This could have a profound impact on adoption and the use of EHR functionality specifically related to interoperability. What would it take to increase interoperability, make it clinically relevant and give providers the assurance it will increase efficiency. The technology must respect clinical workflow. At the end of the day it comes down to the relevance to the provider.

So, if the provider honestly believes these enhancements will improve care and efficiency, and particularly if they're indirectly tied to increased reimbursement for improved healthcare value interoperability will advance rapidly. If the providers do not believe this nothing else we do here will make much of a difference in the long run. Thank you.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great, perfect, only 8 seconds over, it was great. There is a common theme that we will return back to in our Q&A session and MacKenzie; I'll ensure we get back to your 11:00 o'clock on-time hour. You've mentioned workflow, each of you have actually highlighted workflow and business drivers in your community and the need to ensure that you achieve business value through integrated workflow, so we'll return to that in Q&A. So, Karen?

Karen Van Wagner, PhD – Executive Director – North Texas Specialty Physicians

Thank you very much; I appreciate the opportunity to address this group. My name is Karen Van Wagner and I am the Executive Director of North Texas Specialty Physicians, which is a nonprofit 600 physician IPA located in Fort Worth Texas. I also sit on the board of Sandlot which is our community-based HIE.

You know, we started Sandlot as an outgrowth of our core business. Our core business is we take care of patients and we take risks. At the present time we have risk on about 70,000 Medicare lives and many of these individuals have been with us for all 15 years of our existence. We also take care of patients and our journey into HIE developing a community-wide HIE started with our physicians for years using a claims-based electronic; what would now be called mini-record, on their risk patients. So, they were very familiar with this.

And one day a group of our physicians came to the board and said, you know, we are not going to write prescriptions anymore, it is no longer acceptable for us to come to work in the morning and not know that our patients were admitted, it is no longer acceptable for us to send our patients to a specialist and not have the information associated with that patient there waiting for us, it's no longer acceptable for me to order a test because I didn't know that a test was ordered two weeks ago. So, can you help us? So, it was out of that request that the board decided what can we do? And they came up with a plan to do the following things.

Number one they asked our physicians, you all have to go on an EMR, in order for us to help you, in order for us to take a claims-based historical risk management type management project and move it forward you all have to be on EMRs and we gave away over 400 EMRs to our physicians. We gave them the EMR, we gave them 3 years worth of hosting and we paid for the training of their staff and that was not the expensive part, but that is what we provided to our physicians to get this going.

In return for participating in this the physicians had to agree to use the system and that seems rather basic, but it was an important cultural point to hone in on. You also had to agree to share your data with others and to contribute to a data repository for the use of that data by others, that was several years ago and today we have about 3 million people in our community-wide exchange.

We do proximately 50,000 transactions a day of various types. We have 4 million labs, 10 million medications and about 2500 physicians are using the system. We connect to 33 hospitals; have approximately 60% of the radiology groups associated with the community participating. Our first responders use Sandlot when they go on their alerts and their runs, and we also have lab, and pharmacies connected.

We know more what we have to do and what we have done and there is still quite a bit to do but it started out from a cultural realization that technology helped support the change and I would pose to you that that's probably the most important thing, forcing technology on a culture that isn't seeing a need for it is a pretty hard thing to do.

How did we make a business case for this, how did this really fit with workflow, how did this really fit with our core business? Because we take care of 70,000 people on risk we found that our community-wide HIE was sustainable because of the margin that we were able and the return on investment we were able to get on those 70,000 people.

The computer doesn't care whether it's processing 3 million people or 70,000 people if you can isolate the 20% of the people who are using 80% of the resources and use the community-wide HIE to really effectively manage those folks, you can make available to the community a much bigger product that will serve a lot more people and that's what we did.

Our hospital is on EPIC, we were able to work with them to interface to Sandlot. The interface issues are difficult any standardization that this group can make in facilitating that would be helpful. Micky's point about labs is very well taken. Labs are a booger, they are not well organized and most of them in our community do not use LOINC codes. But, we were able...you know, you just kind of plow through that stuff and say is it better for the patient, is it better for what I need to do and the answer in our community was yes.

I would urge you to...you talk a lot...I've heard a lot about workflow, there are two kinds of workflows to be very alert to, one is what I call transitional workflow, it's when the patient presents in the office and you have maybe 10 or 15 minutes to make the appropriate clinical decision. A lot of strategic aggregation goes into preparing the physician for that, which is low tech, but which uses the system a lot. There's also then what I call the analytics or the population-based workflow which supports the clinical transaction that actually is a workflow system that goes beyond and is somewhat very different from what happens in the clinical transaction.

When we started this business people were tolerant of three clicks now they're not. It has to be one click and if it cannot be integrated into the EMR screen that they're seeing when they're seeing the patient it is not helpful to the clinical transaction.

We see a lot of challenges in front of us because we have 70,000 risk patients our physician to our home health, our PTs, our DMEs, our SNFs is that if you want to take care of our patient's you have to use Sandlot or we can't send you patients, it's just that simple.

We will provide you portal access to Sandlot for free but we expect you to use it if you're going to take care of our patients and we track that, if you don't we move the business to people who are willing to use it because we believe it's such an important part of being able to take care of our community the way it needs to be taken care of. And, I'm just about done with my 5 minutes so I'll end there.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great, well, so Farzad isn't it interesting that we've heard from 5 experts who have actually been there and done that, and they didn't say standards were an impediment, policy and consent was an issue, what they actually said was business value, workflow integration, bottom up pressure from our stakeholders this is the enabler for HIE, so of course we now have, MacKenzie, I think 30 minutes for Q&A from this esteemed panel. So, raise your cards as usual, but let me just start you with a question.

I think the challenge that all of us have as we implement HIE is to ensure we're achieving the business value that's necessary in our community and that the products can integrate incoming and outgoing data flows in a way that are consistent with the way a clinician delivers care. Going to a disconnected portal, logging in separately doesn't in fact empower these business goals you've all outlined.

So, I'm curious, Michael in your experience, you know, let's just go down the line, do you today in the products that you use have the workflow integration with these interoperability technologies to achieve your business goals?

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

Yeah, I mean, I think...so everything for us from the clinician's workflow has to be within the EMR, so, going outside of that EMR is almost never going to work for our workflows. There are specific cases like logging into a PAC if you want to see an image where it might be if you're an orthopedist that that's really outside of their workflow, but if you're a clinician like myself who is a pediatrician and not going to do x-rays as often not as big a deal.

So, I think there are exceptions where you don't have to go always directly from the EMR, but anything that we need to impact workflow has to be within the EMR, that's why we moved our hospital database recently into the EMR as opposed to into a separate database, because without that connection it's almost impossible to change the workflow and I think you're right, I think that's where the value is, is in enhancing the clinical workflow.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Sandi, any comments you would make about workflow and tightness of integration and business processes?

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

I think Camden is still kind of in the HIE 1.0 in that regards, we still have the portal view. What we're finding is, I'll give you an example, there's a primary care physician that works out of the hospital out of two ambulatory centers, rounds through a long-term care facility, the portal is the best option for him because he's able to get to that portal anywhere he is and he finds it actually the most useful in the long-term care.

He gets a lot of pressure from the long-term facility that every test that he has to send the patient out to get cost money, it cost staffing, you have to get an ambulance, you have to send them out and so the ability for him to have kind of ready access to a web-based portal is very important.

Integration I think...what we're seeing is that everybody wants it, I'm not sure, at least in Camden, they even know what that means yet and when they get it will that be enough for them to use it or really is it the data inside and the value that it provides that will allow you to go anywhere and get to it anyway.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Okay, so very reasonable comments that the evolution of HIE may start with, especially for long-term care and SNFs, John Derr, that don't have EHRs with portal-based views and ideally you get to the nirvana that Michael described where it's just part of the workflow, you don't even think about it, it's just there. Now, Farzad, you had a comment?

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

I think, the panel did its job, right, by pointing out I think the commonality among all your experiences that the business needs of the users, right, sell what people want. And that if you have the right context for payment then you will find the right technology solution to meet that business need and it may be, you know, ADT notifications in one place, it may be deep workflow integration in another place, it could be for Keith, you know, you tell us what you need and we'll give you...you want Direct notification we'll give you that, you want complex analytics we'll give you that.

So, the real, I guess fundamental question for you is, do you feel that what you are inhabiting, the world you're inhabiting are precious bubbles where the business case is right or do you feel that this is becoming generalized around the country and that the trend that we're seeing whether it's readmission adjustments or ACOs, or patient centered medical homes, or capitation, whatever it is, are the trends going in the direction that five years from now most people will have that business need for interoperability and exchange?

A. John Blair, III, MD, FACS – CEO – MedAllies and President - Taconic IPA

Well, I think that if the trend on reimbursement continues then we're beginning to see what's coming. It's interesting, I mentioned the CPC Project in our region and I just yesterday was looking at the rank order of the 75 groups that are in the project and there are nine areas that they're looking at and they had a scoring methodology, and there were three things that stood out that was fairly common across all groups, there were gaps, one was access to care, this is in the ambulatory space for primary care, the second was care coordination, specifically transitions, and the third was risk stratification and a strategy to take care of those, essentially the hot spotters.

So, we are seeing a very strong interest and that's what I spoke about with Direct on how to handle referrals, consults, immediate discharge notification to primary care with the pertinent information they need that right now, if they don't get that done they will miss one of the nine critical areas for CPC which is clearly going to be part of the gain sharing that's going to come down with reimbursement.

M

We're also a CPC site and economics are going to drive the technology. So, as John said, transitions of care, care that is outside the four walls of a health system, I think that as folks take risk and as getting that information in a codified, connected way and coordinated way is going to drive a much rapid adoption of the technology. So, I think instead of the technology driving the economics, as we have value-based pricing, all those activities which are not just sending a lab from here to there, but where are all the places the patient's been, who are they connected with? Who is their employer? Does their employer have a program in order to manage diabetes? Those kinds of things as the economics follows technology, I think there's going to be, Farzad, a very more rapid adoption than we've had probably in the last 10 years.

M

I would just make 2 comments, one is that the financial modeling around the ACO is so centered around large provider organizations, which most providers in the country don't work in and I do have concerns of the extensibility of that will make the extensibility of the technology as a supporter of that be very difficult, I think that's the piece. And the last is that we don't still have a patient engagement piece in the financing of their healthcare very obviously because of employer-funded and government-funded programs and I think without that patient engagement piece it's going to be very difficult to fully ally the patient into the development of the technology, which is I think ultimately the market driver that it needs to go forward.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Sandi, you're not a CPCI site?

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

No.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

What are the...do you feel that the business drivers in your community are more generalizable?

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

Yes, I mean, we...Camden is gearing up to be a Medicaid ACO pilot, Medicaid ACO Program which is based on geography not health system, but each of the hospitals also have their own ACOs, kind of ACO pilots going on and I think...you know, there are gaps in the data that they can pull in their own systems. And so the ability for the coalition to support a geography-based ACO, but also ACOs within the health system with the data that we're getting across the community is absolutely scalable.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

John Blair?

A. John Blair, III, MD, FACS – CEO – MedAllies and President - Taconic IPA

Just one quick follow-up point, the only reason I mentioned CPCI is it gave me a chance to look at that. We have that demand across the whole community and I can't think of many primary or specialists that wouldn't like to have the information when the patient comes there from the referral or any primary care providers that wouldn't like to have the information back after being seen. So, it's not just financial there's a clinical need for this.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

We've had several cards pop up in the midst of this discussion so I recorded it as David McCallie, then Dixie Baker, then Jamie, then Doug, then Leslie. So, David?

David McCallie, Jr., MD – Vice President – Cerner Corporation

Yes, it's David McCallie. I thank the panel for great input. In other settings where we've discussed HIE we've heard issues about provider workflow and the fact that it has to obviously fit in and the number of logins should be minimized, those things that you've addressed. We've also heard concerns in the past that providers are worried that there is too much information and too much data and perhaps new kinds of liability that would make them reluctant to connect and access that external data and I would be interested in your experience in that regard. In other words, too much data, new liability.

Karen Van Wagner, PhD – Executive Director – North Texas Specialty Physicians

Yeah, that was a big concern when we started out Sir and we had people, what if I miss this and what's my liability on this. I can...you know, over time we have not had that emerge as a problem. We have had no litigation; we have had no patient complaints that held the physician liable for using the Sandlot portal or the Sandlot HIE in a negative way. So, I think there is a big boogeyman factor in that.

I think the real liability concern has now switched to the patient who could have done better had someone really paid a lot of attention rather than the patient who comes after you because you may have seen something that he did not want you to see, but that being said, even given that that's where the focus is, no one has...over 8 years we've had no problems with that.

M

So, we've heard the comments about liability and it has not turned out to be a barrier at all. What's much more of a barrier is the pertinence of the information. So, if it's voluminous it's not used. If it's strictly appropriate for that transition of care it's very much welcomed and used.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, that gets back to the question of workflow which is if there is incoming data how is it that as a clinician I am notified that the data is there and relevant. I do worry slightly about, well there's some work the Standards Committee will do over the course of the next year on redundant and unnecessary data, I send you data and then you send it to him, and he sends it back to me and before you know it, we've triplicated all of the data about me and I get overwhelmed and we want to just, as you point out, what is it that is needed by the clinician for the transaction and liability will be reduced if we make the user interface, the workflow good enough. So, let's see we next had Dixie Baker if I recall?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes, thank you. I have two questions and both of them really relate to what Michael Lee was talking about, about the view capability allowing the physician to view the data without actually requiring the data to flow and replicate on the system, which I really like as an idea, because it does increase the security of the system and the privacy of the individual because it does reduce the need for data flow and reduce the need for replication.

My first question is, when a clinician makes a decision based on the data that they viewed, but those data are not retained in their EHR, how do they document the justification for their clinical decision?

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

So, I think that's a really good question, actually folks delivered on the liability question around that. So, you know, I think that we would, you know, I think as much as we can record activities that physicians do from within their EHR it's nice to know that we can record what they accessed and when so that if we were to look back on that and audit it in the future we could represent what the physician saw as part of their clinical decision. I think that in general we would support that as part of our documentation. So, if I made a change in plan for a patient around an MRI result that I saw, you know, somewhere else that I would use that as part of my documentation.

There are times that we will recommend retrieving documents if we think they're important for people to store and we can actually print from the portals if we want to, if we absolutely need to do that. So, I think that there are opportunities and, as I said, some of the information comes like a hospital discharge summary, but the view portal gives us an opportunity to see say a preliminary item from some areas or things long before we'd ever see the actual document appear and also see them at a later time, if a patient comes 3 months in later and says "I was at the neurologist 3 months ago" you know, and then you never got the referral consult, it never came through Sandlot or one of the other mechanisms. Our state HIE is now up and running so we ought to be able to do a better job with that as we move forward. Did I answer that question?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel

Deaconess Medical Center

Dixie highlights a very important point which is...I mean, again we trust each other, we have good journaling of all of our transactions. So, if he makes a clinical decision based on potassium of 2 and then I change it to a potassium of 4 and he makes a mistake and he says "well, hey, at the time, at the moment I viewed a potassium of 2" that really hasn't happened for the fact that any changes are documented in an indelible way with good data integrity in our systems of record so that flow would be shown, as well we do send a persistent copy of the data for certain encounter events to him which is then retained inside of his system, but it is an area of concern.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, I had a second question about the same thing if you don't mind? This sounds like this viewing, I like this idea a lot, it sounds like the kind of application that the Stage 3 RFC talked about as applications that can be built on top of EHRs and as a member of the Standards Committee I'd be interested in knowing what kind of standards would be needed to make it easier to build this kind of web-based viewing capability.

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

I think the important part there is looking at the wrong end of the room for the answer to that question. I think John will know a lot more than I will.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel

Deaconess Medical Center

So, I have the implementation guide which I'll send you which actually establishes an announcing system for secret key exchange and trust building and then a RESTful approach to calling any kind of module that displays web-based information. So, in fact EPIC implements it however they want, all they agree upon is that a calling URL has patient identifiers and trust associated with it. So, I'll send you all the details.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, I would like to see it and I'm more interested in the viewing.

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

I will say we have built 8 of them outbound for us and 3 of them inbound coming back and with different vendors it has become a much greater challenge in terms of what, you know, what we are able to do and what we are able to accomplish. Some of the vendors don't store their data in accessible ways so the time lag between retrieval has been much more challenging or they have multiple versions. So, I think, just like other examples of HIE the standards would actually really help the development of, you know, these types of activities so that other people would use it.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Thank you.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel

Deaconess Medical Center

So, I've sent it to you and I've sent it to MacKenzie. Jamie?

Jamie Ferguson – Vice President, Fellow - Kaiser Permanente, Institute for Health Policy

Thank you, Jamie Ferguson. Well, Dixie honed in on part of my question so I'll try to put a slightly different twist on it to get another part, but I think starting with Michael, talking about the Direct access and then also Karen and Sandi talking about the portal access specifically, you know, these are really powerful examples of when that kind of viewing or portal access is the right answer and yet we may also at times have transmission requirements for example for transitions of care. So, when is the actual transmission of data that can also be viewed redundant or unnecessarily burdensome and when is it really required in addition to having view access?

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

I'll start again, but, you know, I think that highlights the question that there are multiple examples of where one single solution won't solve all of the problems. I think any transition of care really requires some form of summary documentation moving back and forth. It would be hard to rely on just notification when something has occurred and requiring somebody to go to a portal to look at that. I mean, in general I would think transition of care is actually one of the things I like about...it's the only thing I like about Stage...no, I'm only kidding, the Stage 2 recommendations, but, I think the transition of care is so important for the safety and movement of the patient and I think as much as we can involve the patient in understanding what's occurring at transitions of care that will also be really helpful. So, I hope that answers your question.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

I agree I think you need both for different circumstances. There are a lot of long-term care, home health agencies, ancillary providers in Camden that that's their only way to look into the data. Wherein the Camden County Jail, you know, they're on paper so it's the only way they can see the system. For other entities the transaction-based will be...I think actually both, you know, would be nice to have. You want some of the data you may not want all the data.

Back to the question about, you know, too much data and liability, I look forward to Camden having that problem. I think that when we talk to physicians about someone coming into long-term care and they get a stack of papers this high from the hospital I think there's a lot more liability in that stack of papers then there is with trying to find the latest CT scan or getting another CT scan on top of it, but I think that there's room for both and I think we're a long way off of getting out of the portal view until, you know, everyone is electronic and I still think we're a long way off.

Karen Van Wagner, PhD – Executive Director – North Texas Specialty Physicians

The portal is very useful for our care managers for our care logistics managers who are doing something other than that 10-15 minute office visit. Also, you don't hold up good waiting on perfect and most of the SNFs and ancillary providers in our community have no other tool other than the portal, which is very helpful to them.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, thank you. Leslie Kelly Hall?

Leslie Kelly Hall – Senior Vice President – Healthwise

Hi, thank you. Karen, I have first a clarifying question. Did I understand that of the 3 million patients that you have in your service area you only have 70,000 at risk and that management of that 70,000 have given you a positive ROI?

Karen Van Wagner, PhD – Executive Director – North Texas Specialty Physicians

Yes.

Leslie Kelly Hall – Senior Vice President – Healthwise

Congratulations and thank you for that.

Karen Van Wagner, PhD – Executive Director – North Texas Specialty Physicians

You're welcome.

Leslie Kelly Hall – Senior Vice President – Healthwise

I have a follow-on question to that is that Michael talked was well about patient engagement and how important that is in the future. Can you speak to how you plan to, all of you, to engage the patients and have them participate and what you believe are the major drivers for patient participation in your efforts?

MacKenzie Robertson – Office of the National Coordinator

And this is Mackenzie, if I can just remind the panelists to please identify yourselves before providing any remarks, thanks.

Keith Hepp – Chief Financial Officer & Vice President – Business Development HealthBridge, Cincinnati, Ohio

This is Keith Hepp with HealthBridge. The first thing we did was really just connect all the players labs, radiology centers, physicians, hospitals and so getting that rich content of data was the first task. We are involved with the PHR, community-based PHR test and from our perspective what we do not want to do is to get between a PHR that's tethered to a particular EHR if that's the best way to go.

What we want to is two things, one provide a solution that is not just that one instant of an EHR where that patient, especially complex patients saw that one primary care doctor, but to provide a community ability to both send it to portals as well as to have a community portal that will take information as it's exchanged, look at the kind of data and say is this something that a physician needs to look at, certainly don't want a pathology automatically going to a PHR, you know "boom you've got cancer" that would be very bad.

So, basically it's looking to see how we can supplement data, looking at the kind of data and using PHR from a community basis in order to have a holistic view of what happened to that patient across the community.

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

This is Michael Lee from Atrius Health. So, we currently have about 1/4 of our patient population using our portal, so we have about 1 million patients, about 1/4 million of those use the portal actively. So, we have some experience in trying to engage patients at least that way so that we know they're communicating with us.

I think where we don't have the step is around their changing behavior or willingness to change behavior around particular care plan goals and that's really the step that we're trying to turn now. So, it is a trick, it is...I was speaking to Judy Faulkner briefly before the thing, you know, we're working with EPIC on developing some form of plan of care that the patient can activate as well as home care teams, extended family members things like that, visiting nurse association.

I think the extension outside of our practice facilities and using some form of summary documentation around goals and plan of care is really the way we want to go next. It's just really a challenge to figure out how to digitize that. The barriers and things that patients look at and changes in goals are very different from the clinical context. So, we can't just replicate what a doctor wants to see in EPIC versus what a patient wants to act on and see at home and that transition is going to be a challenge for a time to come. So, the answer is, I don't know the answer, but we're trying.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

And I would just add we have a real problem with that in Camden and I think that Camden is not alone. In a place that is mostly Medicaid and uninsured, if you can't text a patient on their Medicaid phone you're not going to get their attention. They don't have wireless, they don't have Internet access, they don't have computers and so, you know, we're going very down to the basic needs of texting things like that.

You know, I look at, and I maybe a cynic in terms of patient engagement because of where we work, but, you know, when you look at the diabetes classes we hold, we get participants in the diabetes classes, they're usually the more educated and, you know, the not impoverished diabetes patients. You don't get the people who really need to be there and I think the same goes with patient engagement and HIT is that they're not going to come, you have to go to them just like you like you have to go to them for their clinical needs, you have to go to them with Health IT, you have text them, you have to ping them "did you take your blood sugar today" on their phone and hopefully we'll work up to getting there and in places like Camden I think is going to be a real problem.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, we've got 10 minutes left, we have 6 cards up, want to try to get to folks together and get their comments here, so, Doug, please?

Doug Fridsma, MD, PhD, FACP, FACMI – Director of Standards & Interoperability – Office of the National Coordinator

Thanks, so I have one comment and one question. The first is, is that when we think about interoperability, what you've really articulated is interoperability is not black and white. In fact, sometimes you can exchange information as a scanned document, the information is exchanged but it's not computable. Sometimes you actually have the structures that you share but there are vocabularies like LOINC that aren't shared and able to kind of create integration.

And, I think you've raised 2 additional issues that we haven't really talked a lot about, but they are reflective of interoperability. So, it's not just about meaning and structure, and exchange, but it's about context. So, a diagnosis that is collected at the time of admission is different than the diagnosis that is put into the chart at the time of discharge and understanding the context of both the collection and the use is part of interoperability otherwise we make bad choices or bad decisions.

But, I think there's also this notion of active integration and maybe that's where the view piece comes in, so you don't have any of the other pieces, but you create a way that says I'm context aware and this the point in the time that we need to get that information. And, so I think it's going to be important for us to think about that as part of our interoperability strategy, passive context and active integration as pieces of that interoperability puzzle. So, I welcome your ability for us to articulate what that means and kind of tease that apart because we may have different solutions.

The question I have for you or the challenge is, is that everybody talked about linking business case to technology, but I think there's a gap and we don't have a good way of talking about it. So, for example, when you talk about a particular business case, the things that were going through my head and maybe it's related to some of this text stuff, is the business case requires synchronous or asynchronous communication, does it require high-bandwidth information like images or can a text message just serve the purposes?

So, the thing that would be really helpful is if we could begin talking about business cases in terms of what it needs independent of the solution. You know, synchronous/asynchronous, state full versus state less, high throughput versus low throughput, because that provides us the ability to decouple, if you will, our solutions in a way that allows us to say, given the characteristics of the business case, this is the best solution to apply because it has all those same characteristics.

I feel like right now we talk about a business case and then we lead directly to the solution and sometimes that business case isn't well articulated, if you will, and we end up with solutions that sort of fit, but not quite. So, I would challenge you as you think about that, what is the way we can describe our business cases such that we can link them without regard for the kind of solution so that we get the characteristics of the solution matched to the characteristics of the business problem.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Any quick answers.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

I'll just make a very quick comment. I think business case in our experience has to be...has to come from your patient population, you know, I think that the business case in Camden is very different than the business case in Cherry Hill, which is 10 miles away, they are very different populations. So, I think it's not necessarily even driven by what each of the health centers or hospitals or primary care practices need because they all need something different and they all want something different and they all think differently. It has to be based on the patient population that you're trying to care for and what they need.

Doug Fridsma, MD, PhD, FACP, FACMI – Director of Standards & Interoperability – Office of the National Coordinator

So, my challenge then is, as you described the difference between Camden and Cherry Hill.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

Right.

Doug Fridsma, MD, PhD, FACP, FACMI – Director of Standards & Interoperability – Office of the National Coordinator

Cherry Hill may have everybody's got smartphones, right? And they can manage and they've all got 4G and they've got, you know, so the kinds of solutions you might have there and their expectations may be different. How do you without sort of describing the solution, articulate the difference between the Camden business case and the needs of those patients from those in Cherry Hill such that we can speak about it in a way that gets us to a good solution as opposed to one-size-fits-all, it's a patient issue so therefore let's do "x."

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

Right, right.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Arien is on the phone wanting to comment, so Arien, please go ahead and Anne Castro also on the phone, no she's not.

Arien Malec – Vice President – RelayHealth Clinical Solutions

Thank you, hello, hopefully I'm coming through well. So, first of all this panel made me very happy. I think a few years ago we would have heard everything about policy and technology and now we're hearing the primary focus be on business and workflow and I think this represents a huge move forward for interoperability.

I have a question on workflow and in particular some of the workflow solutions that have been described require close collaboration with EHR vendors and the world today may have been different from the world couple of years ago, the Meaningful Use and EHR adoption have meant that there are many more EHRs in the community, and that the EHR vendors are kind of heads down getting people deployed and upgraded, which means that for some of the EHR vendors, if you want anything it's six months, if you want an interface turned on its six months, if you want a portal integration its six months. So, the EHR to any question is six months, six to nine months.

So, I'm wondering, some of you already addressed the leverage that you might have with EHR vendors or the leverage you might have with physicians in the community who can put leverage on EHR vendors to get this level of integration done, but I'm wondering if you can address how to get all the participants to do the level of integration to make that workflow work?

Keith Hepp – Chief Financial Officer & Vice President – Business Development HealthBridge, Cincinnati, Ohio

This is Keith at HealthBridge, yeah it's a great point and we're connected to 30 different EHRs about a couple of years ago it was about 10% went direct to an EHR and about 90% of what we had electronic was going through a clinical messaging system and right now it's about 60% going to EHRs, so there's been a sea change in getting people connected and one of the advantages of health information exchange is that the EHR vendors are very, very busy, they have a lot of work to do.

So, it's not really a question of, you know, twisting arms, what we do is we provide a value to the EHR vendor that although the results aren't exact, they're not perfect but they are 90% LOINC'd. We spent a lot of time up front making sure CBCs comparable across different health systems and different labs, so in many ways the EHR vendors view us an ally and not as a competitor because the work in order to connect any of the 800 locations that we're connected to is significantly less than if they were doing it as one off's. So, we try to make the vendors and ally and have a value proposition if they connect to us once then the amount of work to get the next incremental EHR sold and installed is much less than it otherwise would have been.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, a quick executive decision by a consensus here we've decided to skip the break, because we do want to hear from Claudia, David, Wes and Christine Bechtel and so what that would imply is that bio breaks may be taken on an as needed basis. Claudia, be brief.

Claudia Williams – Director - Office of the National Coordinator

Thanks. What I love about this panel is the concept that you start with the outcome and work backwards to the technology you have need as you've said and that you've combined in your work process changes to change the way you're delivering care with the technology. It would be really interesting to hear what actual outcomes have resulted in the kinds of things we might expect HIE to have an impact on, readmissions, medication errors, follow-up after a hospitalization and even things like reduction in unneeded tests or duplication of tests. So, would just love to hear quickly from any of you who have actually...I'm not asking you to separate out the impact of the HIE, but what impact have you had on the kinds of things we expect HIE to really improve?

M

Well, I can't speak to HIE because I think we're a few years out from that, but I can tell you that some good news will be coming on EHR in a fairly scientific evaluation over several years, but HIE yet to come for us.

Karen Van Wagner, PhD – Executive Director – North Texas Specialty Physicians

Let me share a couple of things from our experience. We own our own health plan and it's a Medicare Advantage Health Plan that is very concerned about star rankings, quality rankings for the Stars Program. When we started out, we were at about a 3.25, we're now at a 4.5 and hopefully we'll be at 5 star next year that's our goal. One of the real critical elements in helping us to that is that we have number one, been able to combine results from around the community so our...you know, you may know what you did in NextGen, you may know what you did in Allscripts, you may know what happened in the hospital with EPIC.

But if you want to know what Mrs. Jones's likelihood of having a mammogram, a colonoscopy or whatever you need to scan the community and we're getting community-wide lab results, we're getting community-wide results from these things really boosted our star rankings, because we knew, we knew, we just had a way to aggregate it, the data warehouse was able to churn through it and we were able to get credit for things that previously probably would have fallen off anybody's radar screen.

The second thing is that we've been able to take a lot of our management, our processes in regards to improving quality and move it to the point of care. Claims allowed us to go back and kind of troll through the data and call the patient back and do this and that and the other. What we have done through, we call it metrics, we have been able again to, at the point of care have a pop-up, have a little icon, that when the patient needs something to be done it flashes red and if the care logistics manager or the physician pings on that, that flashing red icon means that there is a star measure that needs to be handled or an ACO pioneer measure that needs to be handled, or HEDIS measure, we've got like 200 of these things built into measure builder.

But the patient is there and before that note closes in the EMR, before that patient leaves the office some action is prompted to take that metric and turn it into a compliant metric. So, our experience is that our scores on the 5 star have moved significantly because we've been able to take that process, utilize the information in the HIE and move it to the point of care.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Thank you, so David McCallie?

M

I believe that the interoperability in some of the exchange probably was a piece of this, but we have noticed a 50% reduction over 2 years in our patient centered medical home groups for 30 day re-admits and I think that's part of it, but I, you know, there are many, many other factors.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Thanks, David?

David McCallie, Jr., MD – Vice President – Cerner Corporation

Yes, David McCallie. I just wanted to make a comment on Jamie's question earlier and didn't get a chance to slip it in, which was, Jamie questioned the need for both portal views and for more directed transactions to pull data in to the EHR and I wanted to make a lobbying point to the notion that I think we could unify those into a single view if we allowed these portal views to support a secure download of the information that was seen on the screen and some of us have been pushing for technology expansions around the browser to make that possible so that if you have the direct view of like a patient's summary and there's something in there that you want a local copy of, you can just click a download button, have it grabbed by your EHR intercepted from the browser, you'd need an embedded browser to do that, but I think that would go a long way towards establishing kind of a common framework in these two divergent modes, that's an editorial comment, sorry, prerogative of Standards Committee member I hope.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Real comments accepted. Wes?

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Thanks, this was fascinating if only for the breadth of the problems that you have solved. Aside, I just wanted to say that the lady from Camden talking about a patient's Medicaid phone was a very eye-opening comment just all by itself the notion that there would be such a thing as a Medicaid phone was new. What we heard about...what I heard out of everything that was said was that we need to support providers with EHRs and not. We need to provide information to providers in human readable form and sometimes in computable form. We certainly need computable form to aggregate.

What I heard was that where computable form was being used, and let's be clear, it's used when you aggregate; it's used if the data that's taken into an EHR can then drive clinical decision support rules or be displayed in trends or things like that as opposed to just being filed as another report that came in.

I'm going to ask you each to say have you done a lot of adaptation to the data sources in terms of getting that data aggregated and finally across a lot of different experiences we've heard that people have good luck using the existing CCD, the HITSP C32 as a way to get a viewable report not such good luck as a way to get computable data from multiple vendor sources. How critical is that going to be as we move to the next form of that, which is the consolidated CDA because I think it addresses how much we're going to need to find ways to support that process.

So, my questions are SHIM or no SHIM, meaning adapting to the data sources or not, and the likelihood that you're going to be relying on structured data out of a CDA in Stage 2?

Michael A. Lee, MD, MBA – Director of Clinical Informatics – Atrius Health

So, I can start with that. This is Michael Lee from Atrius. We have done very little, almost none of actually incorporating Direct data from multiple disparate systems into our system. We have limited manual entry of specific data elements but not very much coming automatically so that we can trigger decision support or other tools off of that. I think it's a major struggle. I think medication reconciliation and things like that, as part of Stage 2, is probably the biggest target for us in trying to figure out how we might do that.

Sandra Selzer, MS – Director Camden Health Information Exchange, Camden New Jersey – Camden Coalition of Healthcare Providers

With regard to the question about data sources, yes we have someone who, you know, looks at the report and looks at the data sources, has gone back to the hospitals to add different sources like admit diagnosis, because we found that we needed that for aggregation. I think aggregation of data it needs to be cared for and monitored because physicians won't trust it if it's not...if they don't think it's accurate so you need someone to shepherd that data absolutely and we've made small changes, but not a lot.

M

We spend a lot of time and spend a lot of time at the beginning standardizing as much as possible. What we would never do is change a reference range, we would never change a result, we wouldn't try to normalize between different labs and different health systems and say that this is equivalent to that. So, from a structuring data, a lot of it was not changing...none of it would change the clinical data, it was just structuring the message so that it's a standard way of being able to be received.

We also spent a lot of time at the beginning doing LOINC coding and adding LOINC coding to systems that could not do LOINC coding dramatically improved the ability for EHRs to do what you had suggested, Wes, which is bring it in and do that kind of...regardless of where it is, do the trending. So, the biggest issue on CDA, we're big supporters, the biggest issue is being able to get it and send it. So, we're kind of, you know, we're at the mercy of the systems being able to both produce and consume, and we're just not there yet.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

So, just to be clear, you went back to the sources and got them to send standard data, you went to the labs and got them to send LOINC data, is that right?

M

Correct.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

So, you didn't put adapters into your data flow to correct for their mis-sending?

M

Correct, so those that can natively send it they would send it to their systems. We also had technology that if they can't that we had a translation table that would translate from local codes to LOINC and we also have a technology that, you know, one of the dangers is that you have a static interface and over time those codes change. So, as part of what we did was first do that one implementation to make sure that it's LOINC code and were about 90% as far as quantity goes, but also put in a technology in order to monitor that so that if there is a change in either a local code or a LOINC code that we would be able to catch that, flag it and send it to whoever is saying at the lab this is what this is, this is sodium, and be able to show them here's something that has changed, do you want me to take a look at that? So, it's both the up front and the ongoing that's critical to be successful.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Thanks.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, we are out of time, but Christine last word.

Christine Bechtel, MA – Vice President – National Partnership for Women & Families

Spectacular. Christine Bechtel, National Partnership for Women and Families. First of all thank you guys very much and also thank you Micky for your slides, I think that was such a helpful organizing framework and it's really great to see what's happening in field. I worked with a lot of you guys probably 5 or 6 years ago when I was at the eHealth Initiative and everybody at the time said it's all about aligning incentives, there is no business case for this and, you know, it's good to see it's actually true, I don't think we can say that about everything we said back then.

I wanted to follow-up briefly on Leslie's question and suggests that there is I think a more multifaceted way to think about patient and family engagement that would be helpful and you may do varying degrees of this already, but for example, and maybe we'll just do like a show of hands because that's faster, but how many of you guys have consumers on your boards for the HIE? Do you have more than one? Thank you.

So, I think one of the things that we have been seeing is that most people really want to get to patient engagement in care, behavior change things like that and they build applications, they build self-management programs and education classes for achieving that goal. But what we haven't seen is really wide-spread deep effectiveness of that and most of the time it's because we built it for them and not with them and so we've begun to really think and I just want to offer up this quick framework to say that it happens in multiple levels, right?

First is governance and when we're approaching, you know, a time when information exchange is accelerating we want to ensure consumer support and we want consumers actually to be part of driving success then we need to have them as part of governance and in more than a token way and so I think that's one piece of it.

And the second piece is really engaging in the system of care and the design and whether that's a piece of technology or the App and really collaborating with consumers to make sure that it meets their needs or whether that is in the design of the medical practice and how we integrate, and how we change workflow to accommodate these things.

And then the 3rd is really engagement in care and that should be really built around a partnership construct. So, I just wanted to suggest that I think, you know, we hear and have heard many times that there is a trust issue and it's more about the people and less about the technology and I think that consumers can be...and we've seen this be the case. The consumer can actually be a really helpful resource for advancing information exchange, but only when they trust it and a lot of that trust is linked to value for them and we did a survey about a year ago that showed that. So, I wanted to suggest that framework as a way of thinking about it. Thanks.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Okay, well thanks very much to the panel. We can go on all day, this is great stuff, but I do want to turn it over to Paul for the next segment of the meeting. So, thanks again.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, thanks, John, so not only did you take our break, I'm sad to report that you took your time on this next panel. Well, thank you, so for the first panel we heard a lot of...actually a lot of success stories and building the case for creating the value that pulls instead of pushing things onto people. This panel is constructed to help understand a little bit more about the technical and business barriers probably with an emphasis on the opportunities. I think some of the panelists have some concrete recommendations for the Policy Committee and the Standards Committee on how we can accelerate this...hopefully this pull towards the value case in HIE. We're going to start out with John Halamka and then proceed with David Horrocks, Bill Spooner and is it Toni?

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

Tone.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Tone Southerland. So, we'll start out with John.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great, I'll make it quick.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

That's all right.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, just a quick story for the group I'm not going to use any slides. In 1997 a group of stakeholders in Massachusetts came together and formed the New England Healthcare Exchange Network, NEHEN. We didn't have the benefit of Meaningful Use, we didn't have the benefit of standard transport, what did we do? We built appliances that cost every participating organization about, well \$100,000 a year to put on the edges of their networks.

It actually worked pretty well. I mean, they actually brought business value to the point of the last panel because in this case we had cost avoidance and largely administrative transaction exchange, but we did not get mass adoption, especially at the smaller practice level because the barrier to expense, the lack of standards prevented those from being deployed as extensively as we wished.

So, what do we have today? Well with Meaningful Use Stage 2 we have non-ambiguous transport standards, we have content standards that are good enough and we have vocabulary standards that are curated by the National Library of Medicine.

So, about a year ago stakeholders in Massachusetts went to our friends in CMS and said we would actually like to build a ubiquitous public-health information exchange across the Commonwealth at very low cost. How low cost? For the solo provider office \$5.00 a month that would use the Meaningful Use mandated standards and the incentives that Meaningful Use offers and the policies that Meaningful Use brings to democratize health information exchange in Massachusetts. We went live on October 16th of 2012 with that new construct.

So, I would tell you, because the subject of our panel here is barriers and I think potential accelerators, that we had barriers, lack of standards. We had barriers, lack of policies. We had barriers, lack of incentives, but Meaningful Use Stage 2 closed many of those barriers in brought us enablers. Now there are still some interesting barriers.

So, we are told, for example, several vendors will offer HISPs of their own. So, a vendor who we trust goes and signs up Joe's endoscopy shack. Do we decide that, to the point of the last panel that we're going to incorporate data into our systems of record for Joe's endoscopy shack? Well, identity management and the Direct protocol may say it really is Joe's, but, hmm, you know, do we need not only authentication but authorization and somehow more than just certificates to trust the data coming in from Joe's is legitimate. We'll talk this afternoon I think about some of these trust issues.

So, I would say that at the moment Meaningful Use Stage 2 has given us the tools, technology and policies we need to rapidly advance health information exchange in Massachusetts at low cost, but there are still issues that we need to work out, largely around the trust and deciding what information can be incorporated.

There will be interesting technological barriers as we move onto our next stage and that is we talked this morning about pushing data from place to place, we talked about viewing data, but when we get into pulling data across a community we have interesting issues of consent. How do you document what can be pulled by whom in what context and there aren't, at the moment, the unambiguous standards of the metadata for documenting what can be seen by whom and what context.

So, we will need to work on standards on things like record locator services and consent documentation and data segmentation across the records and those are in the work plan for both the Standards Committee and the Policy Committee, and the Privacy and Security Tiger Team over the next year and we do have some policy gaps some of which are unique to Massachusetts, for example, we are an opt in to disclose state except for HIV data which is opt in to view per episode of care and so that's a real challenge because if a record contains HIV information and you have consented to disclose it somehow you can send it because you know that there's a consent to disclose, but you can't view it until you've achieved another episode of consent to view, it's an interesting policy challenge for us.

So, look forward to the ongoing discussion, but I hopefully brought good news that Meaningful Use Stage 2 has empowered Massachusetts as a community.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, thank you very much. David?

David Horrocks – President & CEO – Chesapeake Regional Information System for our Patients (CRISP)

Hi, thank you, my name is David Horrocks I'm the President of CRISP the Statewide Health Information Exchange in Maryland. Last week I attended our annual briefing to Maryland legislators in Annapolis and we are proud of the efforts in the state and we gave a generally positive report of progress immediately followed by clinicians who gave these disheartening stories of frustrating time consuming EHR tasks, steep learning curves and difficulty finding information and so we recognize that our successes are still limited in the broader scheme, we need your help, we're very supportive.

I'm also of the opinion that HIE organizations such as CRISP by themselves cannot achieve that deep interoperability for which those clinicians were pining. As one of the contributors to our state's HIE strategy and an individual held accountable to implementation I have the following conclusions about limitations and opportunities in our field.

First the tie-in between adoption of Health IT and near-term impact on provider reimbursement is strong. Tools which might help providers improve care will receive an interested but tentative reception when that's tied to a payment reform or new CPT code. Yet, when tied to a payment reform those same tools will command the attention of an institution's senior most leaders. I'd suggest the committees do whatever possible to coordinate policy with payment reform efforts, for example, tools to help LT, PACs and hospitals better communicate a patient's health status are a great idea but they're not tied to reimbursement and are difficult to get used.

Second, in Maryland we're deploying a service which notifies a PCP in real-time when a patient visits the hospital, this like Cincinnati, services built using very simple encounter data and messages sent via Direct, the CMS announcement of new CPT codes for timely post discharge follow-up care is creating a strong demand from providers for this service and I'd encourage the committees to latch onto those relatively simple ideas such as this in an effort to make their adoption wide-spread.

Third, Meaningful Use can be complicated for small practice. I would encourage the committees to focus on fewer and similar requirements and then insist that those requirements are met in a very thorough and meaningful way for example, the ability to calculate a QI indicator is logically very important, but it may be done only to meet a requirement and not used meaningfully.

Fourth, standards matter little without ease of use, I think that's a theme today, as a cautionary tale we made IHE compliance central to the query HIE deployment in Maryland, yet we found using the HIE interface is very cumbersome with our particular tools and the tools of others. And although the systems check the box IHE has thus far proven of no value whatsoever in our HIE deployment.

I encourage the committees to insist that EHR certification be accomplished in a manner which is highly usable for clinicians in the real world. For example, certification of an EHR should require generation and forwarding of a C-CDA to be very easy from a provider workflow perspective not just technically possible in the context of certification rules. I know it's difficult to create what are perhaps subjective measures of usability, but perhaps evidence of a features broad use in production could be necessary for recertification.

And finally, of all ONC's efforts the one for which I have the most hope and expectation is the Direct Project especially when combined with the C-CDA an inexpensive, secure, easy to use messaging platform which was ubiquitous for healthcare providers could unlock a panoply of innovation including consumer mediated exchange I believe.

I would encourage the committees to pursue as a highest priority efforts that ensure that Direct is easy to use, Direct is inexpensive and Direct is truly interoperable. I believe our best chance to accomplish those aims is to garner the full, true and unflinching participation of the EHR vendors and to broadly establish at least one important use of Direct and I don't believe the HIEs by the way acting as HISPs will ever be able to make Direct a success on their own.

So, might the committees more tightly focus Meaningful Use criteria and EHR certification on making the production transport via Direct and consumption of C-CDA documents a common place reality. For example, could the committee work in conjunction with CMS to reimburse certain follow-up care only when referrals and visit summaries are sent and received electronically. Thank you, why I think our organizations are limited in what we can do alone I'm very optimistic about your role and we're very, very supportive of your efforts.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you, David. Bill?

William Spooner – SVP/CIO – Sharp HealthCare – San Diego, California

Thank you, thanks for the opportunity to participate in this forum. I'm Bill Spooner, I'm with Sharp HealthCare in San Diego and we're a little bit different than some of the organizations, we have been doing risk-based business for 25 years. We presently have about 280,000 capitated full risk members either contracted through various health plans or Medicare Advantage. We also have about 50,000 Accountable Care Organization members including 32,000 I our pioneer ACO.

Historically our capitated volume has been in a narrow network. So, we've been able to accomplish much of our data sharing through virtual integration. The old seek out context management standard, get a screen and just pop from screen to screen and see the patient information, very simple and works well, but as we've started to expand into broader collaboration in our community we opted for an enterprise HIE approach, we're implementing a vendor product and our philosophy is that we'll talk to any physician who practices in our hospital regardless of their EHRs.

Now what we are hearing from some of these physicians are "yeah, that's wonderful but it's pretty darn expensive." We hear from the EHR vendors and they say I'm doing 100 different interfaces, we're hearing prices of \$5,000 to \$10,000 to connect them. Some vendors even \$20,000 to connect them and this does come down to the standards.

Well you can say “well standards aren’t a barrier” they really are a barrier because there is so much variation within these standards even within our enterprise connection where we have a larger budget, I would not want to have either vendor admit the number of hours they spent in fine tuning their CCD connections into our HIE. I mean, they just were not the same and we really need to get there.

I think when you look at the whole HITECH Program for the past 3 years you have to place it in context. It really was a fast-track infusion of technology, infusion of investment into the industry and we had to recognize there were such things as these varying standards. We necessarily built data silos that we didn’t want to build and so now we’re going to go through a few year period of really trying to harmonize those standards to really get true interoperable health systems.

I really appreciate the role that ONC has taken as a catalyst. I think while we may disagree with some components of standards, I like for the most part the flexibility that has been brought. I like the fact that we’re having the conversations about Direct versus exchange, community and enterprise HIEs, that governance is going to vary by community.

I particularly like the fact that we heard the message that with Stage 2 for our portals just make them work, find the best thing that works for your community, I think that is great and that is really spurring innovation all around the country. I appreciate you narrowing the choice of the standards in Stage 2.

What we do see though is that we are challenged not only with HIE, but with everything else that’s going on in the world ICD-10, our ACO implementations preparing for insurance exchanges, we are watching our vendors fast-track their software development to meet each stage of Meaningful Use and recognize that it takes time to build quality software to implement in our environments and then to adopt the workflow changes that everybody has been talking about this morning. So, I think it’s really important that we try to walk before we run that we don’t try to feed too much at it at once.

I really do see the ACO as the carrot, the regulations are sort of the stick that makes us go forward but ACOs do offer tremendous opportunities. Besides our ACO in San Diego we have two other shared savings plans that are building up and they’re all looking at how they can share data better and they really are competitive ventures and that somewhat distinguishes them and I know that sometimes it may grade at the nerves of the community HIEs that would like to do everything for everybody, but the enterprise HIEs are really trying to capture patient volume and they may try to do something that’s a little bit...than what their neighbor is able to accomplish.

Recommendations, I’m going to come back to standards. I think we need to be able to harmonize our standards. We can’t change on a dime so we need to make incremental change, just to throw a number at you, I pulled some numbers about our interface engine, HL7, we connect 58 applications, there are 208 interfaces and 392 threads of interfaces and we’re sending 3.9 million messages a day. You don’t just flip a switch and change them. I think that’s the important thing that we have to realize. We have to go slow and not blow the whole thing.

I appreciate some of the innovation that has come out of some of these think tanks, but we need to make sure that we’re ready for it before we can adopt it. Interestingly, though this is not part of directing the HIE, but the whole area of the reporting indicators, quality standards, identical is not the same as equal and we’re just being besieged by reporting indicators, some value-based purchasing, pioneer ACO, etcetera.

Several years ago in California we were getting different report indicators required from each health plan and the Integrated Healthcare Association was able to harmonize those. We’ve got to get the harmony among reporting indicators or we’re just going to drown in that rather than being able to do the good work of caring for our patients.

Just a couple more comments, Farzad would be very disappointed if I didn’t bring up the question of patient identification. While I’d love a uniform patient number, we’d like a national gun registry but we can’t have a patient registry, thank you. We’ve got to find a solution that avoids errors one patient harmed is too much and the best algorithms are not close to perfect. The Rand Report a few years ago showed an 8% error our internal information would say around 4-5% error, we have to find a better way to identify our patients that’s fundamental to our information exchange.

In terms of resource investments by ONC, I think that we're passed the point of incubating HIE operations, we need to really focus on the priority issues, getting standards improved and then placed, evaluating what we've done and really disseminating best practices, establishing learning communities so we really can find out who is really doing it right rather than what I read in the newspaper. And really, again harmonizing those quality standards and not sort of end with it... avoid the unintended consequences.

It concerns me that some providers are saying the cost of the penalties are lower than the cost of compliance so I'd rather pay the penalty, I'll forego the opportunity. We really need to find ways to streamline it especially for the small providers in the marketplace. I'm concerned that we're missing out on other important innovations as we're addressing some of the details of standards harmonization etcetera, things like medical devices, home connectivity, patient care alerting, just reams of things that we could be doing, but they're taking sort of a backseat to making sure that we meet Stage 2 of Meaningful Use, which I think is wonderful. Anyway, thank you very much.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, thank you and Tone Southerland?

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

Thank you I'm Tone Southerland with Greenway Medical and thank you to both committees for the important hearing today and especially for the opportunity to present. I feel fortunate to have experience in both the public and the private realms and the advancement of HIT and specifically in Health Information Exchange through my work at Greenway as a technical lead and interoperability solutions, and also a Co-Chair of the IT Patient Care Coordination Planning Committee, and as Co-Chair of the Beacon EHR Affinity Technical Workgroup. I'm very encouraged at the progress within both realms having been involved in some form or fashion in both the development and the implementation of standards since 2007.

When it comes to furthering the advancement of scalable information sharing across EHRs within HIEs in health systems I believe the key is to continue to foster that spirit of collaborative public/private policy agreement. There is evidence that this type of approach works on a technical level and this really has begun to foster a sense of trust in the provider community which in turn will lead to successful business models for all stakeholders.

I also believe that it is necessary to avoid the creation of any new initiatives when possible around the exchange of healthcare data and instead to embrace existing ones offering better avenues of coordination between these groups. We must also support coordination of such groups over consolidation unless it makes sense to consolidate for both the EHR supplier and the health system. This approach is very much in line with the public/private direction that has proven to be so effective in Healthcare IT.

In addition to this we must also consider what international initiatives are happening such as Canada Health Infoway, epSOS in Europe, there are several others. What have they done? What lessons have they learned? What are their successes and what are their challenges and how did they overcome them, and how can we bring those back into the program we have here in the States?

Overall, the standards are in place and initiatives like the EHR/HIE Interoperability Workgroup and the Beacon EHR Affinity Group are prime examples of collaboration on technology and use case. Meaningful Use Stage 2 is a manageable advance towards large scale exchange that sends the right message that it is time to get serious about exchange across boundaries and this should foster the same type of collaboration required for emerging care delivery models such as ACO and value-based medicine.

The committees also make a great point in that Meaningful Use does not cover or incentivize all the needed areas of exchange. I would agree specifically that state-wide or regional HIEs and labs are two priority targets in which to broaden incentives as an approach to success possibly driven by Meaningful Use measures that already speak to the exchange and flow of lab results, which currently place the emphasis on providers and their EHRs.

On the technical side, we must continue to support of as few as possible standardized clinical content templates. In Meaningful Use Stage 2 there are only a handful, there's consolidate CDA for transitions of care, there's QRDA for population health and there's HL7 v2 for labs and immunizations, expanding this to incorporate new content standards will significantly increase the workload needed to achieve semantic interoperability. If new content needs to be standardized for exchange that's okay, let's just carefully consider before we pick a new content standard and try to use what is already available. In my experience at IHE I found this to be second nature as we do not create new standards but we always profile existing ones.

Transport protocols on the other hand are implemented in a variety of ways across healthcare communities and this is largely without significant consequence as long as those transport standards adhere to a minimum set of requirements around security and privacy such as Meaningful Use Stage 2 lays out.

Greenway's collaboration to date with Cerner and EPIC on data exchange and physician alignment have not encountered any hindrances due to implied or existing policy and have shown real progress as a functional and business framework. Instead collaborative success has only been a matter of working through normal levels of bureaucracy and corporate structures to simply put the right heads together to get the right folks on the right phone calls. Overall I do not foresee any regulatory pressures around these efforts at this time.

In closing on the national level, that sense of fostering collaboration and grassroots ideas can lead to a sense of market competition that would lead to new business ideas. The emergence of IHE integrating the healthcare enterprise is an example of this through a recognized need to add the structure of use cases to accompany content, transport, security and privacy standards. This is good for the overall industry and has arguably led us to the successful interoperability portions of the Meaningful Use Program we have experienced today.

IHE USA is now offering a certification and collaboration with ICSALabs, it is yet another example of initiatives allowed to percolate into reality. There is no lack of innovation and entrepreneurship in Healthcare IT that the right amount of public/private collaboration cannot advance a sound policy and business opportunities that the provider community and the patients, who are becoming savvy consumers of their healthcare and self-help technology tools, cannot embrace. Thank you.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, thank you much to the panel and I think you reinforced a lot of the messages from the first panel. I want to comment on one thing about...Meaningful Use has placed the onus on the provider, the users of the technology, we've used certification criteria to put in requirements for the vendors. I think David Horrocks had actually an interesting idea and we also talked in the former panel and this panel about the usability being both the driver and the requirement in order to get wide scale adoption but also outcomes from this use.

So, I wonder if there is a Meaningful Usability of the systems, because that seemed to be a root cause of some of the problems enumerated by the first panel and second panel. And David's interesting example was if you cannot prove that you are usable in the first certification you might have some onus of proving that it was widely taken up in the recertification. So, it's almost a victory by the usability, I mean, prove the usability because it was widely used since we're having trouble coming up with usability criteria per se. I wonder what the panel thought of that notion of ways of looking at proof that the vendor's product is usable?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, quick comment to start with. So, NIST of course has been working hard on defining what is usability and the ONC safety report that was issued a couple of weeks ago highlights the need for this kind of usability testing and certification. My measure of usability is oddly enough how much training I have to do for a clinician to actually use the record effectively.

We actually have a couple of on-line tutorials but we don't have a training program. In effect it's web-based, it runs on iPads, their choice is back, forward or click here and it's been proven to be pretty effective. So, I certainly look forward to work at the Standards Committee level in reviewing the NIST activities on usability and trying to create something that's objectively measurable. I certainly would like to see, especially with the workflow discussion we've had today, some sense of that measurement of usability as a product that's certified.

William Spooner – SVP/CIO – Sharp HealthCare – San Diego, California

I think it will be a really tough one to achieve and I'm going to give an anecdote since we have both Cerner and EPIC in the room, a physician practices at our Mary Birch Women's Hospital and at Rady Children's, we were hearing complaints in Mary Birch that "I hate Cerner, it's so easy over at Rady with EPIC." Then we found out from the people that at Rady that the message was reversed "I hate EPIC it's so easy to use Cerner." About the only thing standard is click count, it's perception, it's willingness to adopt, it's getting the workflow in place. I'm just not sure how you can really prescribe usability. I think we need to get best practices out in the industry, but I think it will be a really tough one to prescribe.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

That's been the challenge and that's why I thought the fact that it was used was a retroactive, retrospective way of proving it. Farzad?

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

I was interested in both Bill and John who mentioned dollars because as we started off our assumption here has been that standards and more consistent implementation, and troubleshooting of those differences, as Tone mentioned, are ways of reducing the cost of all those custom interfaces, reducing the time it needs to get on the phone with that other guy and negotiate how we're going to send it and to trouble shoot it. And the news from John was very promising that with some elbow grease you can dramatically reduce the cost of those interfaces.

My concern is when you're not a statewide system with good clout, when you're even a large powerful influential customer as a hospital, whether the reduction in cost to the vendors of establishing those interfaces will be reflected in reduction in price to customers. So, it's quite possible that we will continue to see \$5,000 and \$10,000 interfaces, because that's a business model and people are charging what they can charge and in a certain way if...you know, we've all heard examples of where, you know, you can charge the license fee upfront or you can charge more on the transaction fees, or you can charge more for interfaces, it's all revenue to the vendors.

I'm wondering if any of the panelists would like to provide us with kind of whether there is a policy approach or there is a market approach to getting the prices down after the costs come down?

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

I think just off the cuff, I think interoperability will become a commodity, you know, we've all compared it to banking and other interoperability things that have happened in different industries, and we see that. We don't pay to access our bank when we're in one state versus another we just have access to it. So, I think we'll see interoperability go down that same path and us as an EHR supplier we recognize that and we help our customers where we can and we try to keep our interface costs low so that that's not a barrier for them for interoperability.

William Spooner – SVP/CIO – Sharp HealthCare – San Diego, California

A couple of comments in terms of policy, as we were talking about the operationalizing Regional Extension Centers in California, we had the conversation about limiting the number of suppliers and that just was politically unpopular, but the real feeling was if we could limit the number of suppliers than we could negotiate down the price of the interfaces and, you know, unfortunately we weren't able to do that. My comment, though my suggestion and I know my vendor friends will throw rocks at me, but let's post the prices of their interfaces on a website and let everybody look at them and perhaps that will apply some pressure.

David Horrocks – President & CEO – Chesapeake Regional Information System for our Patients (CRISP)

Farzad, for what it's worth in Maryland where it's so difficult we're just not trying to do those interfaces. We're not trying to suck information out of the ambulatory practices with those interfaces or push it in with those sorts of interfaces. And, I think that we're very eager to see Direct as the mechanism to get information out of those ambulatory systems. Hospitals are a different story, a big institution, you can spend the time and money on that, but in those many, many small practices we think that just a completely different approach is needed.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, Farzad I share your concern and let me tell you a story. So, in Massachusetts we said, you know, rather than see vendors charge interface fee to every stakeholder let's do group procurement, at a state level what we're going to do is a project management office is going to go out to the major vendors, it turns out in Massachusetts 16 vendors account for 90% of the transaction volume in the Commonwealth, and we will pay them at a state level to develop the interfaces once.

And we actually found great cooperation among the vendors to adopt the standards, that really wasn't the problem. They said that actually we don't want to take your money and the reason we don't is because, well we've decided Direct is a good thing and we're going to operate a HISP ourselves and in fact that HISP may have associated transaction fees or subscription fees. So, in a fact it's like putting a postage stamp on an e-mail.

We will adhere to the standards, there won't be an issue of having a complicated interface that we charge 100 people for, but in fact to get in and out of our system you will go through our HISP and each doctor will pay a subscription fee to our HISP, oh, and then you as a state want a HISP, well that's okay, go, have at it. Direct standards will work fine.

And so one wonders will we get into a situation of tollbooths in a midst of a variety of standards-based HISPs where I charge to send and receive data in and out of each EHR and that becomes an impediment to commerce.

M

I would just like to second what John said, I'm much more worried about that than other interfaces and also whether those HISPs might have trouble creating trust between themselves so that messages wouldn't flow universally.

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

I think just to add to that too, we also must consider that there are multiple ways to transport content and I agree that Direct is at the forefront and is a great solution and I think it's going work, but I think we must also allow other transport types to foster and to innovate and figure out ways to interoperate so that as Direct meets the need now and can continue on in the future these other ways to exchange data, more centralized approaches, can also foster and continue to grow and we can use those at a later time for things like population health, dash boarding that kind of thing.

M

Can I add another comment? You know, I'm pretty sure that I'm right in this, I haven't read the Stage 2 for a while, but I believe we have the requirement of being able to communicate with another vendor's EHR and that's huge. Well, this morning when Micky did one of his slides that showed HIE 1.0, HIE 2.0 I was imaging HIE 3.0, which was a commercial venture, because then we know that it's sustainable just like we have EDI traffic today and I can envision 10 years from now all this conversation being gone because we've reached that nirvana of true standards like we have with the banking industry. And, so, you know, I think we've got stumbling blocks along the way, but to me that's really the ultimate that I should be able to buy the services from anyone and it's a question of price, service and quality.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

And to that point, it may very well be that because Meaningful Use Stage 1 requires say a CCD to go in and out of an EHR that there are ways you can get around the subscription HISP model, in effect you put an appliance on the network that contains the EHR and the EHR drops a file to it and it doesn't have to use the HISP that is provided at cost by the vendor.

The challenge with that is the workflow probably ends up getting fractured. So, really if you want fully integrated workflow you must in fact go through the vendor's HISP and I think this is something we definitely must watch because when we look at our EHR integration we look at what is the workflow, but what is the burden to the provider and total cost of messaging.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, I'll just go around the table then. Micky?

Micky Tripathi – Massachusetts eHealth Collaborative

Yeah, David I had a question for you, you actually touched on it when you were talking about the interfacing question, but in Maryland you have a, you know, somewhat unique model in that there is a pretty strong regulatory backing for connection to CRISP and for hospitals. I think the requirement is on hospitals, right, to connect and I'm just wondering whether that, you know, sort of regulatory backing helped with the interfacing, you know, conversation with the vendors and that it gave priority? Did it give any priority to it? Does it shorten, you know, Arien Malec's 9 month, you know, 9 month requirement? Did it lower the cost at all, because, you know, the customers felt greater pressure to get it done? You're shaking your head, no, none of that?

David Horrocks – President & CEO – Chesapeake Regional Information System for our Patients (CRISP)

It hasn't done that, no. I mean, it's been great, our partners in state government have been wonderful in Maryland and the regulation is that the ADT messages have to flow and it reduced my costs because I didn't have to chase things down for a long period. Our hospitals participated quickly. I'd recommend it to any other state, but it didn't make the interfacing itself easier.

Micky Tripathi – Massachusetts eHealth Collaborative

Thanks.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, Art?

Arthur Davidson, MD, MSPH – Director – Denver Public Health Department

Yes, thank you for the presentation. John, I'm intrigued by this number of \$5.00 per month per provider. So, can you describe exactly what the provider gets for that \$5.00, how many transactions have occurred since October and how many providers have actually used that transaction service? I think you described it as a public health exchange is that right?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Absolutely, there are three ways in which one can interact with this public health information exchange, one is by EHR Direct connection and we found, as I mentioned, that we're seeing actually few vendors offer "oh, there's a configuration screen inside the EHR that allows you to use any HISP" but that is possible and there are certainly those who self-develop that took advantage of that kind of model.

There is an appliance model by which you drop an appliance that is on the network of the provider or the organization and it can send and receive data. And the third is web portals, the webmail option that we talked about because SNFs and LTACs actually don't have EHRs. And so what we did in our pricing model, and Micky actually worked hard on this pricing model so he can provide you further detail, is we actually broke the community into five different what I guess I would call price elasticity clusters.

Gee, Blue Cross, you know, you are transacting several billion dollars worth of business, would you be willing to pay a couple times more than the cost of delivering HIE services, you know, in your case it's going to be, you know, \$30,000 a year. Oh, \$30,000 that's cheap, sure. So, what you actually have is the tier 1, 2 and 3, you know, the Blue Cross's of the world and the medium sized multi-group practice paying a little more than it cost to deliver those three kinds of services I outlined so that they cross subsidize the smaller guys or the solo practitioners and that's where we get to the \$5.00 a month figure.

So, where are we today? Well, we on-boarded 10 organizations, Partners and Care Group, and Children's, a couple of solo practitioners so far. Now those first on-boards brought thousands of doctors onto the system. Where we are going over the next several months is, it's the hard work in the trenches of going to every single practice in the Commonwealth, it's estimated to take actually about 14 months to do that and bring them on through one of the three models, the appliance, the Direct connection or the webmail.

Transaction volume so far, because we've only been on since October, is still in the thousands of transactions, but it is getting to this point where it's like having the only fax machine it's only as useful as the number of other fax machines you have that I think you're going to start seeing a hockey stick very, very soon, because other organizations are being brought on rapidly.

There is no transaction ceiling. There is no transaction fee, in fact we believe that transaction fees are a friction or impediment to commerce. We would much rather see a subscription fee. So, for that solo practitioner \$5.00 a month all you can eat so to speak.

Arthur Davidson, MD, MSPH – Director – Denver Public Health Department

Thanks.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, thanks, Wes?

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

I want to take on...and I'm not really asking a question here I'm commenting although your replies will be welcome.

M

...

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

There is a tone here that vendors are nasty because they want to have their own HIEs, they're putting tollbooths on the information highway and banking has commodities, perfect standards and commodity networking. First of all, as best I can tell from my colleagues who work with banking, it costs a lot, all the time to be a bank on a network. You pay the network because the network provides services that are best provided jointly rather than by yourselves.

Simply maintaining trust for each of the different kinds of transactions that you have on a network is incredibly expensive and one of the most expensive is trusting a small merchant who uses a credit card. There's a whole bunch of special requirements because small merchants are about as good with computers as small doctor's offices.

I think it's really instructive to look at Surescripts. Surescripts has a fee for getting certified against them. There are two ways you can pay the fee, the EHR vendor can pay the fee and then the EHR vendor is trusted to certify the end user, becomes part of the trust arrangement, part of the service, now that's good economics because they have to do most of the same identification of the practice and the specialty and all that sort of stuff just in order to bring a customer on.

The other way is an end-user can get certified and then they pay, because they don't want to be on a network with people who aren't certified. I think we have to finally get a hold of this idea that interoperability has to be free for it to be used and burn it. If we can't get enough economic value from the interoperation, if we can't change the reimbursement system, if we can't do anything, then where just twiddling our thumbs here. So, that's my piece.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, David McCallie?

David McCallie, Jr., MD – Vice President – Cerner Corporation

Ah, yes, David McCallie. It's always hard to follow Wes from a very dramatic and important discussion to something pretty focused, but I wanted to follow up David Horrocks on your comment about the difficulty in using the IHE profiles and I just wonder if you could just elaborate on what you tried to do and what was not working with that not so much about the protocol per se but about the way you were trying to use them, just a little bit more detail?

David Horrocks – President & CEO – Chesapeake Regional Information System for our Patients (CRISP)

Sure, our hope was that we could use standards-based XDS repositories that they would connect into this central infrastructure and that we could move data that way. And then as certain hospitals in our state deployed their own local HIEs that we'd be able to interface with them through that same mechanism and it was just was extremely difficult to do.

If you, for instance, our query portal, I believe that if you wanted to see documents that came from one of these repositories you actually had to go to a different place and you couldn't get a unified view of documents, and it just was unusable. And so, we don't do a single instance of that in the state even though it was our very top priority and top criteria in our procurement.

David McCallie, Jr., MD – Vice President – Cerner Corporation

If I could just pursue that a little bit, was the notion that each holder of patient data would expose a query service, they would host their own repository or were you planning to build a central repository?

David Horrocks – President & CEO – Chesapeake Regional Information System for our Patients (CRISP)

We were planning to host the repositories for most of our participants but we knew there would be some who would, because they already had made some investments, would have their own HIE and they'd have their own repository and I'd be off-line be happy to talk to you more about it and get Scott to talk to you more about it because he knows more.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, thanks. Gayle?

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

Thanks so much Paul. Gayle Harrell. John started down the...as his first comment, he started down a conversation on trust issues and we kind of ignored that to some degree in the first panel and perhaps I'd want to wait until the third panel when we talk about governance to really get into this, but I would really like to hear a little bit more from you John, on some of those problems, and hear from the other individuals who are actually running the HIEs and seeing what they have had. I have a great concern as we are going down this line and we're backing away from some governance standards that we had thought about and really want to see things bloom a little bit more before we get down that road.

But, I really still have some very deep concerns on the trust issues and building trust within the HIE community. And your example of the, you know, who you trust...the chain is only as weak as its...is only as strong as its weakest link in looking at that. And I know right where you are talking...you talked about the metadata standards. And are we getting into that when you talk about consent, when you talk about trust relationships and what are you all doing on that issue?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Thinking back to 1997 when NEHEN was formed, this was basically a way of creating in software what fax machines and telephones used to be used for. We did a lot of what I'll call binary agreements where I sign an agreement with Blue Cross and Blue Cross signs an agreement with Partners, we ended up deciding that trust was a function of a bunch of agreements signed by binary trading partners and then we created software gateways that allowed the transactions to flow between binary trading partners and it was fine, it was a relatively constrained number of partners, so it was possible to do.

The State Healthcare Information Exchange has taken a little bit of a different approach. We recognize there are 20,000 physicians in the Commonwealth of Massachusetts and that the way we'd like to craft our trust fabric is a common credentialing approach where a physician's practice would be on-boarded using a very strict set of criteria for establishing trust. They would sign in effect a participation agreement, a rules of the road agreement and if on-boarded then every other trading partner could trust them because they were brought on with a very strict set of criteria.

And that works great if the State Government of Massachusetts signs up every single participant using a single common process. And where we're starting to see challenge is we're hearing "oh, well actually, you know, I use a certain software stack and I am going to go through that vendor's software, credentialing software stack." So you just have to now trust everyone coming in from that vendor as a legitimate identified participant.

So, as I mentioned in my comments, well technologically through Direct trust or NSTIC, this National Strategy for Trusted Identity in Cyberspace or the federal bridge, or some other technical means, true, you know, we could decide that the vendor is a reasonable vendor and that we could decide whoever they credential is probably identified in a way that the vendor says they are but we don't know whether they're good actors or bad actors and so that's sort of an interesting problem, and I've had many conversations with Ariën and Dixie about this, and some of their advice is well maybe separate identity, who they are from truly are they good actors or bad actors, it's a difference between are they authenticated Joe's endoscopy shack, are they authorized, are they legitimate producers and consumers of information.

So, we've moved in our State to common processes for credentialing, common certificate management and now we're grappling with the...with multiple provisions of service by multiple parties, who do you authorize and who do you allow to use and some of that's becoming a policy issue for us.

With regard to the metadata the challenge around our packages today is as I said they're consent to disclose packages, you know, Dixie consents to have her information sent from her primary care doctor to a specialist and therefore it's a consent to disclose operation and that goes from one trusted entity to another trusted entity and that's great.

Where it starts to get a bit little more challenging and where we don't really know how to solve the problem is if you have complex consent rules like HIV related data. How do I decide what in the package is HIV related data and what is not, a medication, a problem, a portion of the note? And so a different consent model could apply to a subset of the package that will require unique metadata conceivably put around a single note that mentions somewhere in the note something that could be construed to be HIV related data and I think over the next year as we start to outline some of the work that the Standards Committee will do, you'll see more and more work on such things as metadata and consent.

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

I'll follow-up on that. I just want to follow-up on that. I know that PCAST we had a report, I guess a year and a half ago on the PCAST report and how is that playing into just what you have to say?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Consolidated CDA does contain templates that are very PCASTian, if that's a word, and that is PCAST asked that we create structured XML-based data with metadata and C-CDA says this is a problem list and here's the metadata around the problem list, this is a medication, allergy, lab, etcetera. So, I think we have done many things that the PCAST report has suggested in our content standards. The thing that is still to be done is work on finally grained data segmentation for privacy and that's work that is going to I'm sure keep us all busy over the next year.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you. Stan?

Stanley M. Huff, MD, FACMI – Chief Medical Informatics Officer - Intermountain Healthcare

So, in Wes's tradition I'm going to mostly make a comment but you'd be welcome to respond. You know, I just wanted to reflect that I think the experience Bill Spooner has described is very similar to our own experience. We've done good work in the things that...in the standards that have been adopted but we're still some distance from having true interoperability around the things that we've adopted. There's more to be done. As you indicated and it would be our experience, you know, we can use LOINC codes for 90% of what we do and there's 10% of stuff that does not fit yet, we don't have codes for, the same is true for SNOMED when we use that for diagnosis and problem list.

And, certainly what we see is a good deal of variability between how people map from what happened in reality to those code systems so that you don't end up with true interoperability. We have the same problems with patient identification. In spite of all of our best efforts we run continually, even though we have a staff of 12 or so people working on it, 4% to 5% of our patients who are misidentified one way or another, either we create redundant records for them or we inappropriately combine two people who are not the same person into the same record.

Those are things that fundamentally I think we need to take on as a Standards Committee to say what are the remaining gaps? It's not that we've done anything bad, but it's just a mistaken impression that people can create interoperable systems based on the standards that we've adopted. We're still not there yet and it would be in the areas of, you know, completing the content of terminologies, getting, you know, richer content into LOINC and SNOMED and the other areas, it would be talking about issues that we already mentioned here today that, you know, once we start getting more of this exchange going on, I can get the same data from more than one source and I need to recognize that and there is some simple things that you could do to basically just say, people should be required and must be required to create a unique non-changing identifier for an instance of data so that wherever that data goes that identifier goes with that data and when I get it, if I get it from A and B, and C, I recognize it, I check the version number on it and then I can keep a consistent record.

And that level of interoperability then is going to lead to a greater return and do the things that we are talking about where you can actually integrate the data now with the workflow and I don't see, you know, I don't have to go somewhere else to see the data or read a documents, I can incorporate the lab data and it shows up in the graph of my lab data and it shows up in the workflow of the clinician as designed by the EMR vendor.

And, you know, we've done good things but there is work left. I think we need to do serious consideration of what are the things that we still need to do that will get us much closer to true interoperability that we've been talking about.

M

Let me just add one comment. I appreciate your remarks, it's right on. So that we recognize that it isn't just ONC and it isn't just our vendors, the education of our clinicians so that we get a consistent documentation practice is huge as well so we are insured that physician one and physician two are coding similarly. We're going through a huge education process right now as we prepare for ICD-10 and it's really the same exercise so that we can be ensured that the data inside our system is solid.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thanks, Leslie?

Leslie Kelly Hall – Senior Vice President – Healthwise

So, I would like each of you to comment about the patient's participation and what you envision that might be in the future, especially like Wes's comment of how do we trust the small retailer or the small doctor. Now we're including the stakeholder with the most at stake. It's not the provider that has the most at stake for misinformation it is the patient that has the most at stake for misinformation, gaps of information, redundant information.

So, how do we get that stakeholder with the most at stake integrated into this in a trusted way, in an actionable way so that we can get some of the advantages we've heard in other testimonies about patient generate health data being included to help inform this new body of evidence called the patient and I'd like to hear comments about how you intend to include the patient.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, two ideas, at Beth Israel Deaconess we've implemented a Direct address in the registration screen of our clinical information system and we'll be demonstrating at HIMSS an automated Blue Button instantiation where any Direct address provided during registration results in the clinical summary information of an encounter or hospitalization being delivered in a consolidated CDA to the Direct provider of the patient's choice. In the case of my records transferred to Health Vault as an example automatically whenever I have an encounter.

As a state HIE our phase 2 which is the work that we're doing now over the next year will include trust of Direct providers for patients. So, that is the physician should not consider our state HIE as a physician to physician exchange it is a person or entity to entity exchange so that it should be just as simple to route a document or clinical record to a patient at a Direct address at Health Vault or other provider as it is to another institution.

M

So, I fully agree that the longer-term vision has to be of patient engagement and patient mediated exchange, anything that is querable should be under a patient's control in the future, it would be very hard to put in place now, but I notice John's strategy relies on Direct and so if there is anything I wanted to communicate today is we are eager to see your work help to make Direct ubiquitous because we'll be able to do patient mediated exchange in the future when it becomes ubiquitous and one more thing I'll say is just a prior panelist pointed out that the way we finance healthcare and payment...there is a lot that excludes patients today in that and I think that stands in the way of getting patients involved in our work.

Leslie Kelly Hall – Senior Vice President – Healthwise

Patients are always charged.

M

In our organization I think we're at where I consider very early stages but we've built our own portal. We decided to do that rather than using a vendor offering. It's all of the early generation secure messaging and so forth but I just saw statistics last week, we had in the last fiscal year we had 750,000 logins. We had 150,000 secure messages between patient and provider, we had 195,000 patients look up their lab results. I was 7 of those 195,000 by the way. And, we collected 2.3 million dollars of cash payments over our portal.

Now, when I was asked the question, well, gee now how many of those would not have paid had you not had the portal, I don't have a good answer for that, I'm sure we got it quicker and it was convenient for the patient. There is much more that we need to do. I like the stimulus of Stage 2 to find ways to make ourselves more sticky to the patients, but I believe also that the ACO, the collaborative care model is going to push us because the real gain for the provider in a competitive model is to bring more services into their own network so that we're no different than Amazon or BarnesandNoble.com, the organization providing the best service and really making the patient understand that we really are concerned with their care is going to come back to us and the portal is a big part of it.

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

So, we have a very similar implementation as John mentioned where we provide Direct enabled interoperability and we can transmit C-CDA documents, we have Blue Button and I think those are all very important. I think to Bill's point about the ACO model, if we continue to focus on outcome-based that's what affects the patient most, right, as a father of four children I know that, I want to know my kid goes to the doctor is that the care that was applied was that effective. So, I think continuing support of that and in Meaningful Use Stage 3 looking to how we can further push it to better engage the patient.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

John?

John F. Derr, RPh – Health Information Technology Strategy Consultant – Golden Living, LLC

John Derr, I represent, as most of my friends around the table recognize, long-term and post acute care. First I want to comment on the first panel which I really appreciated how much they were working with long-term and post acute care, the skilled nursing, and home care, and hospice, and assisted-living which is becoming more and more important and also to recognize David, I appreciate, if we could really somehow put in the reimbursement or a little higher reimbursement for those people who are doing electronic transitions of care would really help us out.

I did want to ask the question that in today's world there are a number of different types of vendors and providers that are not part of the HITECH Act. Do any of you see any additional steps that we could take to encourage those people either on the hospital, physician side or on the LTPAC side that would encourage them to participate?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel

Deaconess Medical Center

Certainly what we're seeing in our community there are many kinds of incentives, Meaningful Use is one kind of incentive but Accountable Care Organizations and risk-based contracting is another kind of incentive, 60% of Beth Israel Deaconess patients today are in global capitated risk plans. We are highly motivated to avoid redundant and unnecessary care and to have smooth transitions. So, what we're seeing is our private HIE motivator is to integrate SNF and LTAC because want cost avoidance because we want high quality, safe efficient coordinated care. That's the incentive beyond Meaningful Use that's working in our community.

John F. Derr, RPh – Health Information Technology Strategy Consultant – Golden Living, LLC

So you would be helping them to be part of...?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel

Deaconess Medical Center

Right.

M

So, I'm hopeful that that dynamic that John just described of hospitals requiring this of good partners and those partners receiving more referrals as a result would be a dynamic that would create demand. I think in terms of the infrastructure to do it, again, back to Direct it's an easier way to go than other types of integration and I'm hopeful as that becomes ubiquitous that it will be easier for those others whether it's LTPAC or other excluded providers right now it will be easier for them to get on board in that methodology.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you. Chris? Oh, do you have a follow-up?

John F. Derr, RPh – Health Information Technology Strategy Consultant – Golden Living, LLC

I just wanted to comment that we're working very hard on our side. We have four vendors now that are certified by CCHIT or other methods and I know the company that I represent has SNFs in the Indiana Healthcare HIE and in the key HIE and I know there are a lot of nursing homes and home care that are doing it, and there are a number of meetings coming up and we're hoping that we get some volunteer direction from Standards and Policy that we can follow to be able to help from our side to be part of the whole thing.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thanks. Chris?

Christopher G. Chute, MD, MPH, DrPH, FACMI – Professor – Mayo Clinic College of Medicine

Thank you, Chris Chute, Mayo Clinic. Extraordinary presentation, these panels are very illuminating and I know we're all learning a lot. As you alluded there are many use cases where access to patient information across exchange environments is going to increasingly arise. Clearly, patients who move or migrate, clearly emergency situations and dare I say national referral centers that would seek to have information from a variety of sources and information, that being said, I have a softball question for you. How do we federate in terms of governance, finance, trust and infrastructure a national framework for the coordination of these exchange mechanisms as they operate?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

That was a softball question in 20 seconds or less. So, we of course will adjust the trust topic this afternoon, but what Farzad has said in the past, and I think this is wise, is that we're going to see a lot of regional experiments in exactly the areas you've described which will inform future regulation writing. I mean, my sense is, because we're struggling with all of these same issues in Massachusetts and we think we've come up with solutions that are going to work but we do not know yet and we're going to try them.

And once we actually discover how this separation between authentication and authorization might work and deciding who's a good guy and who's a bad guy, we'll report back to you and hopefully it's the collective experience that everybody who is in this room that's going to result in a set of guidelines. I think it's going to be too early as Farzad and ONC decided to publish a regulation that solves every one of those problems that you've outlined today because we don't know enough yet but we are on a trajectory to learn enough.

David Horrocks – President & CEO – Chesapeake Regional Information System for our Patients (CRISP)

For what it's worth in Maryland we're talking to our border states about how to do this on a limited scale. I think it's going to be the patient mediated exchange which solves it on the grand scale. It's so daunting to do nationally.

William Spooner – SVP/CIO – Sharp HealthCare – San Diego, California

You know, there are lots of examples with the people who spend their winters in the south and so forth and I think probably the sneakernet approach is step one. Last week we had the experience at home of one of my cats spending the night at the emergency animal hospital and the regular veterinary handed us a CD with a medical record on it, I mean, it wasn't that hard, for my poor cat I can transmit the information. So, you know, I think we can find a way.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, very good. Dixie, please?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes, my vet doesn't have an electronic health records yet. Thank you all for a really interesting panel. My question is really, follows onto Stan's and Bill you mentioned in your testimony that there was a need for one of the barriers to HIE relates to incomplete and unspecific interoperability standards especially around interfaces, patient consent and patient identification. And to all of you I was wondering whether you know of any specific, any existing standards or emerging standards that might be helpful in filling these gaps or where there might be a need for new standards development efforts?

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

I'll take a stab, first I'm kind of a standards guy on the technical side so, yes there are standards out there. We've implemented a standard called XACML for consent with the Health Information Exchange of New York. We've implemented several different IHE profiles which reference standards in the oasis group of standards for patient identity management and many of these are laid out in the EHR/HIE Interoperability Workgroup Specs which is partnered up with the eHealth Exchange Program.

So, there are standards that are available. Our challenge as a nation and as an industry is implementation of those standards, because the way I implement it and the way my partner implements it are often times very different and that's when I think you get into a lot of cost challenges like David you said you were experiencing with CRISP where, you know, you're using the standard but due to a lot of the different factors that come into play it's just really hard. So, I think we'll continue to see an improvement on the implementation of these standards as we continue to support that public/private collaboration.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

And of course, Dixie, I didn't want to answer the question, because, you know, you're the master of all of this stuff. Dixie and her team have outlined an objective way to look at standards maturity and I would postulate that for many of the problems that we have on the table that there aren't mature standards by your definition that would solve them and some are going to require invention.

I mean, a simple answer, we had to come up with a provider directory for Massachusetts that worked across all firewalls and was simple and had no barrier to implementation and by your definition of standards maturity we couldn't find anything. So, we invented a very simple RESTful approach to exchange response query for 15 different provided data elements and implemented it in days.

So, I think we have to be very careful, you articulate it as experience, that we don't necessarily pick something off the shelf that exists but has never been widely implemented. We may very well have to look at your standards maturity and invent new technologies that reduce the barrier to entry to solve some of these problems.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, that's why I was asking the question. And back to Tone, you said you implemented XACML across the entire HIE. So, did you do development of standards around representation of the rules?

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

So, we implemented as an EHR tied into the HIEs an edge system, if you will. We did not participate in the development of the XACML standard, if that's what you're asking?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

No, it carries forth the consent rules but you still have to have some common way of representing the rules in XACML.

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

Correct, yes, correct and right now...and this goes back to previous discussion around...to the consent of the data level. We're not handling consent of the data level and I don't know of anybody that is, you know, I want to exclude this particular data element from being seen, or it can only be seen by these providers in this health system. So, yeah, it's still very immature on that side for the consent piece.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, okay, thank you.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, so we're at the end of our time but let me give each a minute to finish your questions, please. Thanks.

Christine Bechtel, MA – Vice President – National Partnership for Women & Families

So, I'll perverse my question by saying I am on the Policy Committee and not the Standards Committee for a reason. So, we've heard a lot in the two panels about variation within standards, data being coded in different ways, these are not, I think new things, I've heard those before in the last 5, 6, 7 years, decades, whatever. But, my question is, so if we really wanted to make incredible progress in that side of our more technical issues, let's say in the next 2 years, what do we have to do? Or, maybe that's too big of a question. What's the number one, number two, number three things that we need to do? And we hear people in this town particularly talk about, well we just have to set a date certain for standards and that feels a little too simple to me, right? Right, just set a date.

You know, do we need to organize what the biggest pain points are, fill the...you know, what do we need to do that's new or is it really just, you know, you need to put it in the Meaningful Use certification and before you answer, I'll say that...I'll remind you I'm on the Policy Committee again, but I'll also say that, you know, there is an increasing amount of attention being paid to these challenges particularly in the political arena and so those of who operate in the advocacy world need to be able to explain in English what the issues are and more importantly what the path forward is so that's really the subtext of my question, thanks.

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

I think, just real quick, coming from my perspective as being in the trenches and actually implementing interoperability and working through these issues, supporting testing events like the IHE Connectathon, which I flew down from Chicago to be here and I'm flying back tonight to go finish up. Events like that where interoperability is tested and problems are solved right there and those get wrapped back into, in this case, the IHE profiles. What other the kinds of testing events can we support? The connect product or code-a-thons where people come to the table and they bring their problems and they find out how to get things connected, supporting any types of testing events like that to figure out what the issues are and wrap them back in.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Very short answer, Wes Rishel will identify the problems and Stan Huff will solve them. So, Stan leads and effort CIMI creating detailed clinical models, so, in fact, Wes said, you know, C-CDA is fabulous standard except everybody records allergies differently, so he'll figure out how we record allergies similarly across all of our enterprises.

I mean, that of course is a short remark but the reality is, is the Standards Committee tries to constrain optionality and with every revision of the Meaningful Use certification criteria you will see less and less optionality.

Christine Bechtel, MA – Vice President – National Partnership for Women & Families

So, but, let me follow-up on that, because this...so the reason that those of us who participated to varying degrees in the crafting of HITECH it was why exactly we separated the Standards and the Policy Committee, was because we needed to...not just the knowledge base, although that's true, but we needed to understand the flow and the sequence between the two, right?

So, from a Policy Committee perspective if there are certain areas in which we need to further constrain optionality I think we...that feedback to us on the Policy side would be very, very critical to have. I have no idea what to do next. I don't know if we should tackle consent, if we should tackle patient...I mean, we've done a lot, Deven and Paul have done and enormous amount, but we still see, obviously, I've heard a lot about these problems today, so the feedback loop there I think could be stronger.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

I was thinking in the Stage 3 process that we've done between our two committees is a good example of you've had a business goal, we've suggested the technical limitations and we're going back and forth to resolve.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Jamie?

M

In the case of at least for Direct making it widespread and ubiquitous I don't know about constraining standards and what's important there, but to Wes's point, the EMR vendors need to be...the EHR vendors need to be on board and can you find that intersection where they make money, where they are making their customers happy, the customers are getting reimbursed and they're doing better for their patients, if you can find even small instances that push hard on those.

William Spooner – SVP/CIO – Sharp HealthCare – San Diego, California

I really think you have to be, you know, really solid and realistic in terms of what you are trying to expect. It takes time to build software and especially when you do have different standards, you've got different EHR architectures across all of the vendors and you're trying to turn it that into something totally interoperable, it's going to take a few years and I think we just have to realize that we can create an arbitrary deadline and cause a collision that none of us would like.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Go ahead, Jamie.

Jamie Ferguson – Vice President, Fellow - Kaiser Permanente, Institute for Health Policy

Jamie Ferguson. So, in the discussion on what's needed to achieve more robust interoperability I wanted to reflect on a couple of the themes that were repeated several times. One thing we heard that while we need to have more metadata and, you know, better metadata descriptions, observation instance identifiers, potentially a digital signature on the templated sections of the C-CDA, we need to continue to have both structured and coded as well as human readable data. And I wanted to point out that all of those things are possible in the existing standards such as the C-CDA today, but they're not required in the implementation guides for those standards and I wanted to reflect on that and ask a question.

In my experience, the reason why those things are not required isn't that the standards aren't there or that they don't work, they're not in there for business reasons and what I mean by that is that the transmission message size was thought to be a limitation as well as the actual computing cycles and processing power that was attached and so if for example, if you had unique observation identifiers, instance identifiers, additional metadata attached to be able to achieve the kind of interoperability that you would like to have, what would be the impact on your business operations if for example, your actual message size, the data volume, increased by 5 times to 10 times, what would be the impact on your business operations if you're computing cycle requirements increase by 2 times to 3 times, because that's really the impact.

In terms of the development of the implementation guides, that's sort of what it came down to in terms of why some of those things were not required.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, an odd answer Jamie and that is that I generate about 80 megs of novel data per patient per year and it turns out it cost me almost 25 cents per patient to process that, it is immaterial and that is double, triple, multiply by 10 my image size it will not substantially impact my operation. I have about petabytes of data now with all image data and all text data on all patients. So, I don't see that is our gain factor.

The gain factor I think is more, as Dixie's group has outlined, the maturity of some of these things and that is it's just going to take us some time to get comfortable and familiar, and ubiquitously adopt such things as a global unique identifier on every observation, don't quite have that down yet.

Tone Southerland – Senior Application Engineer – Provider Services, Research & Development – Greenway Medical Technologies

We do not have that down from a Standard or Policy or a Federal Government level. We are in the EHR community we are beginning to do that. I know we are, I know some of our vendor colleagues are. We have an OID, we register with HL7 and we have certain segments and that OID means certain things. So we can track a piece of data as it moves around between different Greenway systems we can track it back to the origin where it came from. And, so, I think we'll see that move out into hopefully something like Meaningful Use Stage 3 where we continue to take away the optionality and further specify how that will look and I don't think size will be an issue either, I agree with you John.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Well, we've had a hearty discussion. I think almost everybody has contributed and asked questions. I want to thank the panel for your very valuable service in providing input and educating us. Thank you. And so right before lunch I think we have our first session for public comment.

Public Comment

MacKenzie Robertson – Office of the National Coordinator

Operator, can you please open the lines for public comment and I'll ask if there's anyone in the room that would like to provide a public comment if you could please come to the panelist table.

Alan Merritt – Altarum Institute

If you would like to make a public comment and you're listening via your computer speakers please dial 1-877-705-2976 and press *1 or if you're listening via your telephone you may press *1 at this time to be entered into the queue.

MacKenzie Robertson – Office of the National Coordinator

And to allow for everyone to give a public comment that would like to we'll be limiting them to 3 minutes. So, if you could go ahead and please identify yourself.

Gary Dickinson – Director, Healthcare Standards - CentriHealth

Sure, my name is Gary Dickinson I'm a consultant representing CentriHealth and part of my concern is this session kicked off was the notion that success is measured by transaction volumes and I think as the discussion has gone on clearly that's not the case, and that's not where we need to focus, or solely focus let's put it that way, in the sense that we need measures obviously for usability or the success of usability factor, shall we say.

We need measures in terms of HIE for data quality and integrity, authenticity, accountability, for provenance clearly, source, time sequence, context those kinds of things, authorship, non-repudiation, ensuring content binding to the source and the authorship, the trusted...the notion of trusted record retention and stewardship, persistence and non-authorization of content, and audit ability which allows us to track source to use, and content amendments, and versioning from that stand-point.

Our secondary concern is that Meaningful Use 1 and 2 mandate a range of exchange standards that ostensibly convey EHR record content but offer no provision to carry the original author signature binding to this content to ensure authenticity, content integrity and non-authorization and non-repudiation those kinds of things. This is a long-standing requirement for health record content which predates electronic health records and is routinely rendered even in more basic automation with pen and paper and via duplication or duplication via photocopy and fax transmission.

Absent verifiable authorship and authenticity, use of EHR record content for primary purposes, clinical intervention, care and decision-making is not a viable option for many providers. Use of such information may put their patients and their clinical practice at risk and that's a clear issue that we have literally every day as we roll out our system to providers.

Our third concern is in the area of providers, that providers and vendors now have substantially experience at importing various Meaningful Use 1 and 2 mandated message and document exchanges from multiple sources. With each feed comes new and often dramatic variances and vagaries in the certainty of identity and matching characteristics for patients and providers, the certainty a source authorship and provenance, going over some of the same issues, the intent and purpose of capture of the information, the context is that complete information does it have everything that it needs or not? Is it intended to be complete? The date and time of the origination and authorship, date and time of amendment and authorship, the use of vocabulary classification codes and value sets, the mappings of those, the mappings of few or one to many, the mappings of many too few or one.

These are crucial issues in terms of data integrity. Evidence of...to source if transformed one or more times from the source content and the repetition factor, having the same data come at you from multiple directions, simply repeating what's been sent previously either from the source system or echoes from secondary systems.

These are more than data quality and integrity issues. These are issues which go directly to safe and effective clinical practice and care, clinical decision-making and patient safety. Inputs from multiple heterogeneous sources cannot be fixed at the point of exchange even if they're transformed from source EHR or other records through the common sieve of standardized messages, documents, code and value sets.

We delude ourselves to believe that there are backend solutions to front end problems or front-end issues of data definition, accountability, provenance, data quality, integrity, coding consistency and completeness. Thank you.

MacKenzie Robertson – Office of the National Coordinator

Thank you very much are there any more public comments in the room? And are there are any more public comments on the line?

Alan Merritt – Altarum Institute

We have no comments at this time.

MacKenzie Robertson – Office of the National Coordinator

Okay, with that I'd say we're...

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you, we'll adjourn for lunch and resume at 1:30. Thank you.

MacKenzie Robertson – Office of the National Coordinator

If everyone can take their seats we'll get started. Can everyone please take their seats? Thank you very much everybody. We'll now begin again with panel three on governance barriers and opportunities with John Halamka moderating.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, thank you very much and thanks everybody.

Alan Merritt – Altarum Institute

One second please, one second please, operator please open the lines.

Operator

Lines are open.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Okay. Well, thanks everybody for getting back in such a timely way from lunch. Let me just introduce this notion of our next panel as we go through 4 speakers talking about trust. In Massachusetts, I was just telling Dr. Kibbe, we've established a process for credentialing physicians and doing identity proofing and we think it is the best process that possibly exists and in fact no vendor could possibly have as good as process.

So, as a number of stakeholders got together and said, you know, we have vendors entering the marketplace who want us to trust their HISPs. Their processes couldn't be as good as ours. So, what we're going to do is we are going to require every user of every HISP to actually be credentialed by our HISP and then we'll just give the certificates to other HISPs to use on their behalf. So, Dixie and I and Arien and others had some conversations about this and rapidly recognized that regional trust solutions simply will not work and will not scale.

So, as we introduce the panelist today I'm very interested to hear about how can we go beyond regional thinking and regional boundaries, and isolated processes and build a fabric of trust in this country. So, let us start with Dr. Kibbe who is CEO of DirectTrust.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Well, Dr. Halamka your recognition of that fact just shows that we all have to follow Massachusetts anyways. My name is David Kibbe, thank you very much for inviting me, the two committee's and ONC. For those of you who know me and maybe wondering, no I have not left the employ of American Academy of Family Physicians I still work very closely and for the AAFP, and it's largely because of the AAFP's interest in getting across the goal line in 2013 with interoperability among EHRs that I've been able to participate and help lead DirectTrust.

DirectTrust originated as the rules of the road workgroup chartered under the Direct Project in March of 2011 and is the successor to that workgroup both in spirit and execution. DirectTrust has carried over from the Direct Project the members intention of developing a mechanism of industry self-regulation that would be consistent with and would be guided by the principles of the nationwide privacy and security framework.

Now Directed push exchange as its known is e-mail over the Internet between two parties, a sender and a receiver for the purposes of exchanging health information. Each party relies on the other for assurance that the identity of the person behind the Direct e-mail address is valid and authentic and that the privacy of the personal health information contained in the messages and attachment is protected via encryption during transport.

Each party must have sufficient trust in the others identity management and security practices to feel comfortable no exposure or breach will take place accidental or otherwise during that transport and without that trust Directed exchange cannot be expected to occur on a regular ubiquitous and predictable scale across vendor platforms, and unaffiliated entities, and organizations across the country. Without that trust we can expect frequent service interruptions to be very highly likely.

So, what constitutes sufficient trust and how do the relying parties and the agents acting on their behalf reach the necessary assurance as to privacy, security and trust, and identity, and this is very important, without needing cumbersome one-to-one legal contracts between each other or having to engage in time consuming and expensive negotiations with one another and I'm speaking primary here of HISP to HISP. These two questions are really at the heart of the mission of DirectTrust and have been the focus of the members work over the past 2 years.

The products of that work are several, but the most important are the DirectTrust community x.509 digital certificate policy and the DirectTrust agent accreditation program which is operated in collaboration with EHNAC and you have both of those documents, the accreditation requirements and criteria document as well as the most recent version of the certificate policy in your packet.

Although a relatively young organization DirectTrust has a diverse and rapidly growing membership and its policies and programs are already in active use within the industry and are guiding many implementations of Direct around the country.

Now the primary message that DirectTrust and its members wish to convey to the participants in this hearing today is that we are much closer than people realize to widespread health information over the exchange via Direct that is secure, easy to use and capable of connecting people working in affiliated organizations and across multiple vendors products. The achievement of that goal is much closer than we were a year ago for a number of reasons. One of those of course is that as of the Stage 2 Meaningful Use certification and standards all electronic health records wishing to be certified will have to be compliant with Directed exchange standards protocols and specifications by the beginning of 2014.

In many ways we feel that the technical part of Directed exchange is a done deal. Many people have said that the EHR vendors need to step up to the plate, but I think most of them are. But, we also have to recognize that the technology by itself is not sufficient for Directed exchange to grow at scale. Also required are policies and how, and when the technology and technique are applied, who the participants are, what roles they play and responsibilities they have and what evidence has been put forward by them as to the security practices and their trustworthiness.

To the extent that the policies of a trust framework for Direct are national and scalable then I believe they will compliment the best uses of the technology and together the trust framework and the technology will create the conditions under which we can predict that the exchange of electronic messages in this country will grow significantly during this year.

One final comment, there are some barriers that still need to be achieved. There is lack of understanding at the vendor community and in the public, and in the provider community what the benefits are for Direct and how it works. This involves a PKI, Public Key Infrastructure and the use of x.509 digital certificates and a lot of people don't really know how to do that and they don't understand how to work it.

There is a lingering worry on the part of some of the HISPs and other service providers that there is some liability here that they are incurring beyond and above what the provider would be incurring and that needs to be worked on.

And then finally, there are some significant challenges working on a directory for providers. I actually call that a user or subscriber directory because I think that's a better term particularly as we anticipate that Direct will be the main mode of transport for messages between patients and providers, and so at some level we need to include the patients in those conversations about directories. Thank you.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great, thanks very much and the whole question of the provider directory and how that information is shared HISP to HISP is a very interesting one and in the remarks that I've made earlier today I've talked about the difference between the notion of authentication, who it is you are versus authorization, are you really allowed to get to the information and some are saying, oh, I know, the provider directory that'll be the list of the good guys and we'll separate that from the certificate as who it is you are, you know, many interesting challenges to solve. Oh, yes, Christopher Alban from EPIC.

Christopher Alban, MD - EPIC

Good afternoon everybody I'm Christopher Alban, I'm one of the clinical informaticists on the team at EPIC and on behalf of our customers I just want to thank you for having me here to share our experience or share our customers experience with health information exchange over the past 5+ years really.

Our path here started with a simple but common patient problem, we've heard today already, how can patient records be shared when patients cross between organizations? We worked with our customers to define a simple model for doing that to enable that patient data exchange. Those first customers went live and started sharing data in 2008 using Care Everywhere, EPICs interoperability platform I think everybody's probably heard of it.

And the Care Everywhere network has grown steadily over the years benefiting millions of patients all across the country. Current state, now about 5 years later, I just want to apologize to Micky right now we got some updated numbers recently and so the numbers presented earlier actually are a bit higher, it's kind of encouraging where it's something like more than 760,000 patient records are exchanged every month and that roughly equates to about 3.4 million document transactions per month as well and if you add interfaces which includes communication with ancillaries it's something like 1 billion transactions a month we're seeing, a little bit over that.

And worth noting as well we are seeing the beginning of the consumer side the patient's downloading their CCDs and communicating that well, very small numbers, but exciting to see in the context of what we've been talking about today as well.

So, in order for our customers to feel comfortable sharing that information with each other they need to be able to trust each other, we've heard that a fair bit today as well. How do you get to that trust and it doesn't just come from having the technical capability to do so, it comes from more than that. A set of rules needed to be defined and needed to be agreed to by all the participants. Those rules define how the participants should use the tools and how any grievances can be handled or reconciled across those customers.

Our customers tell us to define a fairly simple structure especially recognizing that when you have exchange directly between two covered entities HIPAA provides a foundation for those rules. So, three key points here, number one information exchange is for treatment purposes only, number one. Number two, exchange is mandatory when patient authorization requirements are met and this is important, this means that participants cannot discriminate against competitors when it comes to sharing patient information.

And number three, and this a really important one, each record holding organization gets to determine when, if ever, patient authorization will be required in order to release a patient's record. And number two, if authorization is required they can word the authorization form as they see fit.

So, the rules of the road, as we define it is like the DURSA which it predates, it does a couple of things, it codifies this network of trust and it's binding in that all organizations agree to follow it. It's a contractual obligation to all other participants and in that way it's a shared beneficiary agreement and then specifically the rules describe the participant's responsibility to safeguard two key things, patient information and the technical means for accessing the network.

The participants must ensure appropriate role-based access to the network and they must guarantee that every participant's right to request supporting evidence as of the appropriateness of requests for patient information. Finally, the rules are enforced by our governing council and that's elected from and by the member organizations or the participating organizations.

So, our customers experience with this model of patient record exchange that has been very successful. If you recall were are now seeing something like over 760,000 patient record exchanges per month and that's been rising more than doubling every year. If you draw the line from Micky's first number to the second you see that as well. What's really interesting of those about 260,000 exchanges per month are exchanges with sites not using EPIC and we've heard some of that today as well. And so, we're very encouraged to see efforts like the eHealth Exchange that's looking to provide a governance for a broader group of participants.

So, to summarize, the keys to our customer success with patient information have been a simple set of rules for Directed exchange between covered entities, a governing council of participants who enforce those rules and finally the ability of each organization to define their own patient authorization requirements. I think I hit it right on the nose.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

That was amazing. Thanks very much. Next Sid Thornton, Care Connectivity Consortium.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

Yes, thank you, Sid Thornton from Intermountain Healthcare representing the Care Connectivity Consortium and as I try and bridge my comments and our experiences from the Care Connectivity Consortium through what we've heard from the other panels we are not...it's probably best to give a few sentences of what we are trying to achieve in this CCC or the Care Connectivity Consortium.

First of all we are both an exchange network built off of the NHIN 2010 specifications as well as an emerging set of value added features which we hope as they become deployed will be agnostic to the transport mechanisms. And so with regard to the governance of our participant agreement it's largely modeled after the DURSA.

When you look at the technical implications we're just following the specifications of the NwHIN, but with our mission to advance and enable the transport of information across organizations we are focused on relieving the operational burdens impacted at both ends, both at the beginning and at the consuming end of the information and so if you think about trust in a larger perspective it goes back to what we heard even in the public comment of how do you know and how do you have a trail of the parameters or the attributes that allow you to make decisions on that data.

And so, the CCC then becomes sort of a learning environment where we can extend specifications, where we can try novel approaches to solving some of these broader questions in an environment that allows us to sort of accelerate and potentially even endorse some of these extensions. With that in mind, you know, representing the technical committee there's a couple of specific things that I think we could ask of both the Standards and the Policy Committee in terms of issues of trust and governance.

And first of all is, is there a mechanism whereby we can relieve some of the conflict between the specification conformance motivation and the ability to innovate and I guess I would ask the committees is there such a mechanism. How can we provide sufficient incentive and innovation in that area. For example, some of the issues that we're coming across limitations would include the ability to respond if there are potentially multiple persons matching the subject that's being queried or the ability to communicate the need for consent or an expired authorization, all of these are available to us in the underlying specifications but not in the current conformance.

Second of all, we're looking to enhance the ability to communicate whether or not the...how do we connect the emerging identity and consent services in the private sector into our health exchange networks and as we build these shared services and the architecture to support that we're looking to, not to reinvent services that already exist or emerging in the third-party sector, but to be able to connect to it, essentially be able to point to those.

It's also important we think as we move toward the network of correlation across communities how do we then communicate effectively without the reliance on trait matching that we've heard earlier this morning has inherent difficulties, but instead moving to an environment where we communicate based on the qualitative nature of the identities or the subjects and move across that?

So, in conclusion what we're trying to establish is a place where we have known gaps where we can facilitate innovation and work within both the existing specifications but also work towards those extensions and that's our goal.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Thanks, very much. And finally, Michael Matthews from the Healthway.

Michael B. Matthews – CEO – MedVA

Thank you very to the panel for being able to present to you today. I am bringing forth three different perspectives regional, state and national. I'm the CEO of a Regional Health Information Organization based in Richmond, contractor with the Virginia Department of Health to build out ConnectVirginia which is the statewide HIE and also President of Healthway and immediate past Chair of the eHealth Exchange Coordinating Committee.

I was asked to focus my comments today on my work with Healthway and eHealth Exchange. I have some written comments which I hope are helpful recognizing that I'm from North Carolina and that's a rate limiting factor how fast I can talk before the committee. I will use my time wisely and really just point to a couple of key points.

First of all I'd like to do a level set with the committees in terms of definitions there are a lot of names that have changed over the past couple of years and so let me just go through those names so that you have those straight.

First of all there was what we formerly called the Nationwide Health Information Network Exchange whose name now is eHealth Exchange. The eHealth Exchange continues with the DURSA in effect and is governed by the Coordinating Committee which is Chaired by Kitt Winter from the Social Security Administration.

Healthway is the new not-for-profit membership corporation that was set up in 2012 specifically to provide support services to eHealth Exchange. So, there is a board overseeing the work of Healthway but it is not in any shape or form the governing body over eHealth Exchange, those powers are reserved for the Coordinating Committee. I am the President of that board and Mariann Yeager serves as Interim Executive Director.

The third component on the level set is that the Coordinating Committee and eHealth Exchange really recognize a need to streamline the on-boarding and operations. We felt that we had made great progress, we now have 38 production participants on eHealth Exchange, but we recognize that the old way that we were on-boarding just simply took too long and was too labor and technology intensive.

So, we pursued this new process which involved the designation of an exchange testing body, ETB, and in concert with the Interoperability Workgroup we went through a procurement process to select an organization that could in fact service the Exchange Testing Body and what the Exchange Testing Body does is to certify the vendor services to support exchange. The network production participants will still have to go through certification but the heavy lift on that has been reduced enormously when this fully goes into effect. CCHIT was selected this fall as the vendor of choice and that process is now being finalized and fine tuned and is ready for implementation later on this spring.

Okay, with that I will speak to just a couple drivers and tie that to what we talked about this morning. A lot went into trust from the eHealth Exchange perspective. The trust framework involves two fundamental features, one is the technical standards as Micky pointed out those are driven by the nationally accepted standards around that as well as the trust agreement.

The trust agreement is driven off of DURSA. DURSA incorporates the principal of local autonomy during the Q&A we can go into a little bit more of what that means, but it is an agreement, a binding contractual agreement amongst the participation of the eHealth Exchange nodes, if you will, and the powers are derived by the...governed.

We have moved to a representation model as we have grown now to 38 production participants having everyone of those 38 be on a governing body was unrealistic. We have another 40 or so in the queue for on-boarding, so you can see that we needed to move to a representational model.

We very much are sensitive to the work flow issues, we've worked very closely with VLER and with SSA to ensure that the information is available, is in fact accessed and used for clinical decision-making as well as, in the case of SSA, the ability to support disability determinations. Thank you again for being here.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Wow, everybody was on time and above average. So, let me start off with the first question. Dixie and I have spent a lot of time thinking through these issues that you describe. We've looked at the National Strategy for Trusted Identity in Cyberspace, we've looked at the Federal Bridge, we've looked at DirectTrust and so I'm curious for the folks on the panel could you comment on how you believe the solutions you're employing today are consistent with, congruent with, complimentary to the National Strategy for Trusted Identity in Cyberspace activities or the Federal Bridge?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

I'd be glad to take that first. First of all DirectTrust's certificate policy is consistent with both NIST Levels of Assurance and the FBCA Levels of Assurance as well as Kantara. So, there's an effort to be consistent with these bodies that are setting standards around identity management. We are participating in the NSTIC IDESG as part of the Healthcare Workgroup and we're working with a number of organizations, some of which are part of DirectTrust, but some of which are not on this particular problem.

If you are seeking a Direct address and you have to go through identity proofing of some kind how can you not have to go through another separate set of identity vetting processes in order to seek or receive another credential, in other words, how can we make the setting of identity itself in healthcare not be repeated on the basis of credentials. How can we make that interoperable, so that's the major way we are interacting with it.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Very good. And I see some cards coming up so we'll go to those questions in just a second. Do you folks see the identity management issue, the trust issue at a person level or at an entity level? And here's the reason I ask is that so let's imagine in Massachusetts there are 150,000 participants in healthcare service provision and that's the payers, the providers, the skilled nursing facilities and everybody else, and what we said is, you know, issuing and revoking 150,000 certificates is a challenging problem.

However, really that only breaks down to about 500 different organizations and so if what we do is we say we trust the Mass General Hospital, they get one certificate and, you know, they decide who underneath their entity level certificate is trustworthy and assuming they do a good job of maintaining that our fabric of trust is organization to organization, entity to entity and not person-to-person.

Michael B. Matthews – CEO – MedVA

I'll pick up on that that is very much conceptually in line with DURSA and the requirements that production participants in fact sign onto the DURSA and if they have sub contracts to their participants, their users and so forth that those requirements be flowed down to those individuals. So, it's not to say that it's not issue at a national level, but that heavy lift on that side of it is with the production participant itself and much in the way of the Mass General example you just used.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

And I would add that what we are trying to do in the CCC is also pass through the individual under the...I mean, through the attestations in the SAML and being able to transform those inside our system. We've run into a couple of technical snags with that as you can imagine, but that gives us at least that next generation of traceability to the individual but still making the communication and the connection at the organizational entity level if that helps.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Great.

Christopher Alban, MD - EPIC

I think from the EPIC perspective very much we've seen that the model that has worked, defining it as you say, at the entity level assigning responsibilities that have been binding to those organizations to police at their level and then a grievance process to deal with those situations should they arise. We've not seen any to date, but that puts the responsibility to manage that on the organizations and they police themselves either internally with a process for reconciliation where necessary. So, if there's anything to be learned from that that has been a successful model for doing it and maintaining it and ruling it.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

The answer from Directed Exchange is both, the direct standard requires that the address, the Direct e-mail address be unique and that it be bound to a digital certificate with a public key, because of HIPAA and it has been this way since the beginning of Direct Project's thinking, it makes sense to allow organizations that are responsible for the identity credentialing of their doctors and nurses, and other staff members to be issued an organizational or group cert and then to bind that cert in its public key to multiple organizational members that seems to be what's happening within the real world.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Let me defer the floor to Paul Tang and then we'll go down the row.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thanks, John. So, we know that trust is probably one of the biggest responsibilities or even fiduciary responsibility that the governance organization has to deal with and John Halamka raised this question about sort on the Internet you can be a dog and you can even be a bad dog and you don't know.

So, let me use his test case with...and Chris mentioned specific criteria for EPIC, rules of the road, so first of all each organization has their own privacy policies or allowed to have their own privacy policies. The other requirement is that everybody has to exchange data on a mandatory basis, i.e., there is no choice, if you want to join the exchange.

So, what happens if there's a bad dog in the exchange since trust, as I think Leslie...trust is only as strong as the weakest element, Gayle said, so how do we deal with that considering you have that mandatory clause?

Christopher Alban, MD - EPIC

I guess I'll start with that, so part of the process of having the grievance structure so that you can have a group from the participating organizations to police that, to deal with any grievances and then to apply the penalties as might come from that. So, that maybe if the organization, the entity defines the bad dog as one particular user their responsibility will be to turn them off with the appropriate security that they have within their organization.

It could be that the organization, the governing council says we need to turn off this entity and with EPIC support, in our case, we can facilitate that turning off of an organization, an entity until they show appropriate remediation of whatever problem there was that made them a bad dog.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

So, I guess the question is we've always emphasized the value of choice and the mandatory exchange is what sort conflicts with that sort of primary concept or principle about choice even at the...certainly at the organizational if not the individual level.

Christopher Alban, MD - EPIC

Right.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

And so patients...so in this situation you could have patients who are unaware that there's a mandatory requirement to exchange with anybody, there's a grievance process, there's a time for which, you know, that process takes place. So I guess I'm a little concerned about or have a question about this mandatory aspect.

Christopher Alban, MD - EPIC

Well, sure, but I think one of the keys in there and we talked about it a little bit is that there is an authorization process. So, patients may choose to opt out entirely, they may choose to not fill out the authorization if there's criteria that are concerning to them. They may choose to completely not be a part of it. So, part of the question with any individual patient is do you want to participate as you sign the authorization or your treatment to...your consent to treat form within the organization as you read those do you want to participate, do you want to have your information shared?

So, there are the opt out clauses for patients along the way depending on how a given entity chooses to apply those and where in the process of care they choose to do this. I think that's one of the other important points here and that is the structure we've been using is very much a point of care, this is for treatment purposes only not beyond that.

So, you know, as a physician my perspective is I like to see complete data so I can take care of the patient well and the victim we always had was if in doubt ask the patient. I'm hoping and I'm expecting them to provide me honest information so that I can adequately treat them and do my best job for them. So, the big point here is there are options for opt out at a patient level and those are hit at multiple points in the process depending on a customer's approach to providing those authorization prompts along the way.

Michael B. Matthews – CEO – MedVA

I'd like to add to that from the eHealth Exchange perspective in the DURSA, the DURSA sets forth a series of requirements and expectations for the participants one is the reason for which eHealth Exchange can be used to exchange data, the permitted purposes and ours in that case goes beyond treatment but also includes payment and operations, but there is also a duty to respond to requests based on treatment if the participant makes a request based on treatment, which is the minimum level of participation.

So, much as Chris just described, the request does not have to come out of the organization onto exchange but once it is on exchange and is received by another node then there is a duty to respond. It does not mean that there's a duty to respond with data, it does mean that there is a duty to respond that you have to receive that request.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

And I would add that there's also another factor, again if we think of it from end to end and what our ultimate goal is, one of the value-added services that we are working on is making the permissions and data use transparent to the patient, in other words, being able to provide them where has your data moved, for what purpose was it moved, even down into the discrete data which rules potentially were fired based on this data and what were the implications. And, I think as we go down the path and get to that value added service where it's clear to a patient, as well as to the provider, then we have that mechanism, that feedback mechanism to help in these controls.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Thank you, Judy?

Judy Faulkner – Founder & Chief Executive Officer – EPIC Systems Corporation

I pass.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

You pass, okay. Wes?

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Do I get Judy's time? So, I'm going to ask one question to Christopher and then one to Sid and Michael. I've been doing my best whenever I hear about vendors interoperating to trace down what they're doing and frankly almost within minutes usually of my beginning to ask questions I find that yes there is an exchange of information it either falls into one of a couple of categories it's either some sort of basic version to HL7 transaction or it is a CCD being interpreted as text as opposed to a structured data.

So, I'm curious and I realize it's hard to characterize a whole bunch of relationships in a quick answer, but where you are working with other vendors are those the kinds of interactions that you're getting or are you to the point of having some semantic inoperability through the CCD?

Christopher Alban, MD - EPIC

Sure, the bulk of it to date has clearly been in a view only mode of presenting those CCDs within the patient record for clinical review, you know, a step away from or a step closer than the visual integration we've talked about, which we certainly have with other customers, but in this case we also have the foundation for using SNOMED, ICD-9, other industry standards to do that reconciliation of that data in to allow then reordering of medications, decision support and all the things that go with that. So, the capability is there that's at the initial stages of us seeing customers beginning to do that and that's independent of EPIC to EPIC or EPIC to Non-EPIC that is generalized.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Yeah and I don't want to appear to be beating up the panel here, but what I'm really trying to sort out is what potential is there versus what potential is being used just so we have a fix for where we are and that's a great transition to my question to Sid and Michael. What was once called the NHIN protocols and have gone through the series of names that Michael described include a set of capabilities that will allow for the reconciliation of very specific claims about the consent offered to use the data versus the role and perhaps the purpose for which the data is going to be used.

And I have no quarrel with the technical protocol. I mean, I think it works, I think we've seen it demonstrated to be working. I have great concern about it being rolled out in a scale because of the complexities of simply creating those declarations for complex policies and understanding what are all of the underlying meanings and so forth.

I have the impression that most of the interoperability that's going on in CCC or in the NHIN trials and so forth is based on just rather simple declarations of protocol or not using of purpose and constraint and not very elaborate about this is allowed, this data is allowed for a provider but that data is allowed for billing or any of those sorts of things, is that correct or has you really tweaked and gone through the complexity of those protocols?

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

We are still relatively basic.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Yeah.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

But the architecture supports the granular detail that you're describing. We have found as we have tried to move...the way that the CCC is architected again the permissions for both disclosure and for review, access and review are held at the endpoints respective in the exchange and so it does allow for the autonomy and were allowing for the transmission of those messages through the underlying specs.

We do have limitations with the 2010 specifications that we are in fact extending to allow, you know, the first level enhancements and the first step in that is really to be able to acknowledge that we would be able to link to the subject if we had a non-expired consent that's sort of the first step. And then the next step as you mentioned is actually going down into more toward data segmentation for release, but right now we are very much at the high level and at the whole level document level.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Michael?

Michael B. Matthews – CEO – MedVA

So, in the eHealth Exchange we should be able to accommodate the issues you're raising, Wes, through the transmission of the SAML assertion back over to the node receiving the request we should have specified in it what the purpose is for that request, that query at that point that's when the local autonomy can kick in. So, perhaps Intermountain only responds to treatment request and if I send over a request for payment support then his system does not have to have a duty to respond in that case to provide data if that's not part of the permitted purpose.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

Well, just to be clear on my concern, at the policy level there's a very keen and important issue, which is how much granularity can we offer the patient in giving consent for sharing of their data and there are those who look at presentations and demonstrations that show rather elaborate consent reconciliation going on and say see it's all there, there's no reason that everyone shouldn't implement it all works and my concern is to be sure that everyone is educated on the difference between "yeah we can do that" and "yes we have done that across a big enough space of providers of different size" and all that sort of thing that we know it's practical to roll out. Thank you. Michael, did you want to say something?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

I just wanted to add one comment, you know, it's related and that is that a Direct address if issued at a high enough level of assurance essentially can become a universal identifier.

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

That's really an interesting point. I think early on when we discussed Direct we talked about it being a jettisonable identifier, that is if someone wanted to make it invalid and get a new one they could do it. I wouldn't want anything to change that assumption unnecessarily.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

I just thought I'd throw that out.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Yeah, for example, my cell phone allows me to have three. So, Deven?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

But they don't do any identity vetting either.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Okay, I actually have two questions and since I haven't said anything yet today, I'd like to do the two?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Yes.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Thank you. One is related to the issue of HISP liability and the other is related to a little bit more detail on how the sort of mandatory sharing and consent requirements work, sort of following up on Paul's questions to Chris. So, I want to start with the HISP liability issue that you raised, David, which is...and I'm wondering whether if the liability issue is centered around the concerns that they would be business associates and therefore sort of liable for large penalties under HIPAA per the extension of HIPAA to business associates, whether the recent clarification on the final rule that mere conduits, couriers of digital information from point A to point B are not business associates whether that helps?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Well, that's a great question. The assumption right now within DirectTrust is that in order to be accredited you must be a HIPAA, you must abide by HIPAA and you must have a business associate agreement with your clients, with your subscribers.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

All right on another context we should dive into that in some more detail, but that feels like an obstacle to me to be quite frank.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Well, the issue is, is that some of the Health Internet Service Provider Companies.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Right.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Believe there is even additional liability beyond what HIPAA covers for them under those business associate requirements and, you know, I think that there's a range of opinion. It's something that needs to be discussed. Policy needs to be considered. The conversation with those HISPs in ONC and the Policy Committee around are there safe harbors and so forth, those are really important issues.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

So, in other words for a PHR to be a HISP to a patient you would require them to agree to comply with HIPAA?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Well, that's a great question. Right now we aren't...our certificate policy and the accreditation process, more accurately, does require HIPAA compliance. So we would have to either accredit personal health records separately or try to convince those personal health record companies that it makes sense for them to abide by HIPAA.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Okay, that's worth a separate set of conversations and way beyond what we would have time to deal with here, because I want to explore that in more detail, but again it sort of feels a little out of scope for this. So, Chris, getting back to...I just went to look at your written testimony as well, because now I'm a little bit confused. I thought that I heard; with respect to the sort of sharing of data and patient opt out, that that's sort of operationalized by the customer institution, right?

So, if they said I'm not going to require consent for my patients in order to release data because I'm only governed by HIPAA and the data is only for treatment purposes and I live in a state that doesn't have any additional consent requirements and therefore I'm not going to operationalize it, that in fact there isn't sort of that opt out and so the agreement of those customers in that circumstance is that they share when the request is coming for treatment and they've met all of the necessary sort of attesting to the treatment relationship or shown in...that such a relationship exists, is that the case? I just want to be sort of clear about how it all works.

Christopher Alban, MD - EPIC

There is probably one addendum, which is there's still that consent to treat at the first point for that record holding organization for that patient and that's often where it's placed that says, look we'll share your data for treatment purposes with other organizations where you may be seen, it may include dah, dah, dah that consent to treat builds in that release. And so that's the point at which a patient may say I'm choosing to opt out. I see that right here at the front end, it will not be point of care authorization by a requesting organization required and in that case the record holding organization is saying we will not require it, as you're saying, correct? The patient still has that option at that initial consent to treat to say I want to opt out or I disagree with what the authorization that's being presented to me at that point conveys what will happen.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Judy is this salient to the point being discussed?

Judy Faulkner – Founder & Chief Executive Officer – EPIC Systems Corporation

Yes, are there two levels, Chris, I mean isn't there one level where the patient, the organization allows the patients to opt in or opt out to begin with, it's their choice how they want to run it, and then you're saying there's a second level, at the moment, is that it?

Christopher Alban, MD - EPIC

Depending how a customer sets that up that's certainly possible. So, in part, what each entity has the option to do is set up their particular authorization requirements that may be point of care, that may be much more open-ended, it's built in at different points from treat to consent in the first place down the line through potentially point of care authorization for the patient at each point.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

So, the question, because it's voluntary for each organization they decide on their own. Our organization has gone through where they say well patients don't have consent and they don't ask and they don't give an opt in opt out clause, that's where I think you might get into trouble with this "mandatory" exchange and that's why I'm asking how do you deal with that?

Christopher Alban, MD - EPIC

So, the concern would be then how our customers were interpreting that and whether they feel their approach to consent to treat and authorization for release is implemented in their model as one point in this process.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Without much choice for the patient.

Christopher Alban, MD - EPIC

So, I think that's one of those great questions that we can actually address with the governing council and say, look we see this as a potential issue, how do we look to suggest to those customer organizations an approach that might be less concerning or perhaps more consistent with, you know, the HIPAA release issues or other concerns about privacy. I mean, ultimately there rules are put in place by our customers as a part of either the grievance committee, the rules of the road and so if there's a perception that there is something missing and how it's being covered there's certainly an opportunity to improve that.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

David McCallie?

David McCallie, Jr., MD – Vice President – Cerner Corporation

Yes, I have some questions along that same line and you may have answered them, I'm thinking of Chris and Sid here in particular, but anyone can speak up. You may have answered them and I just missed them or didn't understand them, because I'm thinking in this complicated space and I may not be keeping up with the thread of the thought.

But, what I'm wondering is it sounds like the current model around patient authorization is based on the institution that holds the record and what I was wondering is have you explored the model where the authorization comes from the patient in the context of institution that wants to receive the record?

So, instead of static decision around the record holder let the decision be more fluid and driven by where the patient is right now and what they need where they may want release of information in one context from an organization and they don't want it in another context, have you explored that model where you invert the locus of control where patients consent is captured? And anyone can answer.

Christopher Alban, MD - EPIC

I'll just start with one particular model we're seeing increased use of and I kind of referenced it briefly in our discussion. I don't think it's referenced in our written materials for what it's worth, but that is the growing piece of the patient's side of being able to control that. Through My Chart they have the ability to download a CCD themselves and control who they release that to, that becomes essentially an extension of the PHR and they have the ability to do exactly as you're describing, they control that release point, it's up to them how they may do it and it may provide an option for them to do an opt out themselves and then they will directly control it.

It's a small number now, but it's again...or to go to Wes's point we'll see how that grows and whether it's just a potential or whether it's really happening and whether the traction is there, but I think that trend is...my bet if I had to put money on it is that is where we're going to see a tremendous amount of growth as well, especially for patients who may have concerns about that.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

David, in terms of the CCC we are in beta with that what we call point of care authorizations where we have the mechanisms from a requesting organization to both access and articulate and attest to the consents for the responding organization. But that requires, you know, really a lot of participation and right now we're still in beta so we're probably a few months out from having that functionality with the CCC.

David McCallie, Jr., MD – Vice President – Cerner Corporation

And, Sid, if I could follow-up on that, so you're saying that the responding organization or the potentially responding organization has to tell what they need in the form of an authorization and then the requester has to send it back?

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

Yeah, so if I'm at a requesting organization and wanting to declare as a patient and wanting to give my permission at responding organizations where I haven't previously given that permission they first have to go through the process of identity proofing and validating then go through electronic mechanisms to retrieve the conditions and the appropriate forms, if you will, for the responding organizations, get those forms articulated whether electronically or even scanned and then respond back with the attestation that those forms were collected and appropriately witnessed based on whatever the requirements of the releasing organization. So, it's a little bit cumbersome requiring three electronic transactions. We also have in the State of Utah now our first experience with reciprocal authorizations that's working out a lot better than this prospective or excuse me this point of care.

David McCallie, Jr., MD – Vice President – Cerner Corporation

Back and forth, yeah I mean, I would point out that, you know, in states like Surescripts operate in a much simple model where there's a contractual negotiation up front that says if we capture the declaration from the patient that this release of their prescribing history is appropriate then that's the end of the discussion and it happens.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

That's what's working in the local or the regional consent mechanism that rolls out, but we still haven't resolved all of the interstate issues with that and so that...you know, that's a coordinated effort we are actively looking for the organizations who would participate in that experiment.

David McCallie, Jr., MD – Vice President – Cerner Corporation

Thank you.

Michael B. Matthews – CEO – MedVA

David, if I could just add from the perspective of eHealth Exchange we love seeing the work of CCC and others to look at some of this innovation and approaches for Health Information Exchange so that in fact we don't just stay stuck in one paradigm and one approach but as these technologies and approaches are validated then in fact some of those are likely to then be adopted by the eHealth Exchange Coordinating Committee and then be able to be adopted Healthway on a more broad basis.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

And so to David's line of questioning there are multiple models one can use so is the model that's the three step that you've described another model might be the one that the Social Security Administration views, which is do I trust the Social Security Administration, I do, well they send a request that includes a JPEG of the signature on the form as well as XML metadata that says, we the Social Security Administration following our contractually agreed upon protocol got the signature of the individual to release everything. So in fact I have metadata that allows an automatic synchronized response plus an audit trail, a JPEG of the actual wet signature and within 30 milliseconds I can just send the medical record back and feel like, oh, I've done a reasonable thing.

Another option is the patient controlled health records, I send it all to the patient, the patient then decides who they send it to and then the Surescripts model that you've identified, that is we just simply contractually agree upon ahead of time what constitutes consent and in your own institution you decide what's good or enough. So, certainly look forward to the collective experience of the entire panel and everybody in the room as to which of those many models may actually scale as we go into high production.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

I would just comment that I think within the membership of DirectTrust there is a strong bias in allowing the patient to make that decision and not to try to control that on behalf of the patient but allow the patient to make those decisions.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

And of course a fifth model is probably we create a new cloud hosted patient consent management service and then health information exchange queries such a service to determine preferences, but that's getting a little bit, you know, in the future. Claudia?

Claudia Williams – Director - Office of the National Coordinator

So, when ONC decided not to move forward with regulations on governance at this time, it wasn't because we didn't think there was critical work to be done but because the feedback we heard was that you have a really important role ONC, but we'd like to see you support the existing efforts and accelerate the progress that we're already seeing among those efforts.

So, the question to all of you, because I think each of you represents an important body of work and set of people who are involved, is what could ONC do to help you accelerate your efforts, what additional problems are you wanting help solving? Obviously there are going to be issues that are just yours to solve in your space but would love to hear what ONC as a convener, a bully pulpit, standards maker, policy maker, good friend can do to help you and to support your work.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

I'll be glad to start with that. I think several people today have said we have this opportunity with Direct and Directed exchange to get very far down the field with respect to inter-vendor exchanges of health information in the short term meaning within 2013/2014. So, I think that there's two things out there in the vendor world and to some extent in the provider world, there's not a total belief that ONC is behind that goal and so I think the first thing ONC has to do is keep saying that we are going to get to inter-vendor, interoperability within 2013 and here are the rules that we're going to do it by, believe us, because we're going to do it.

The second thing is, is that I think within that context there's an enormous amount of education to be done, because I think there still are people who don't understand what we're talking about and I keep telling people Direct is transport, Direct is transport, Direct is transport. There are a whole lot of issues that it's not about and yet it is complicated enough when you consider that there is a PKI and, you know, a whole security and trust framework to work with. So, that's my top-rated issue for ONC education, managing expectations, moving people along this learning curve fast enough so that we get to Stage 2 Meaningful Use by 2014.

Christopher Alban, MD - EPIC

So, I'll just say simply, echo what I talked about earlier and that is as we see more and more connections between EPIC and Non-EPIC providing a governing structure for those situations would be extremely valuable and the work we've seen happening with the Healthway and eHealth Exchange would definitely be something that's going to do it. I think that echoes a lot of what David said as well.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Sid or Michael any wishes? The floor is yours.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

Well, absolutely, I'll take that opportunity. I mean, as we look to have correlations across networks and as we look to connect third-party identity validation services, there is a huge wealth in the governmental sector of identification services. If we could standardize the mechanisms in such a way as to be not disclosing and only qualitative we think that maybe a way where we could untap some of the potential reserves for resolving some of our fundamental identity issues without having to go to a national identifier per se.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Michael, anything to add?

Michael B. Matthews – CEO – MedVA

I do, a couple of things, Claudia, one is I think that overall we're perhaps in the most critical period for Health Information Exchange in this country in that we've moved past the early pilots and lab experiments and so forth and we now have a lot of activity and mission critical work going on, but we're not so far along that this is the new business as usual. So, we have to get the word out, communication.

I think there's a real role for ONC in identifying and publishing, and promoting best practices, whether the best practices have to do with the business model or best practices also include the clinical value, somehow in this country we are using a different standard for ROI on HIE than we are on other things, if it's a standard of care we need to recognize it, identify it and then figure out a way to do this responsibly and efficiently.

If it's not a standard of care then a lot of people are spending a lot of time and effort trying to figure this out when in fact it's not bringing clinical value. So, the more we can focus on those types of things we still need some more work on work flow as was communicated throughout the morning.

I cringe every time I hear from one of our physicians or hospitals "I'll do it when I have to" and "have to" in that case mean's Meaningful Use. And so, the ability to keep pushing forward the agenda from a policy stand-point, from the incentive stand-point certainly makes our job easier on the other side of that.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

And Farzad has a comment?

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Dude, we are serious as a heart attack.

Michael B. Matthews – CEO – MedVA

I know you are.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

About the need to have cross vendor interoperability in exchange of information to follow the patient in 2013.

Michael B. Matthews – CEO – MedVA

Well, keep saying that my friend.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Dixie Baker?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, first of all, thank you all for this excellent presentation and good understanding of the different types of governance that's out there. So, what I hear is that we have DirectTrust governing Direct exchanges and we have Healthway governing the eHealth Exchange exchanges, and we have standards that enable exchanges between Direct and eHealth Exchange. How do you establish trust between entities that are using Direct and those that are using exchange and secondly, do you see each transport that we standardize having its own governance?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Well, I think that it's time to bring the Direct community together with the exchange connect community, that's something that's a policy issue, it's an operational issue and things have been moving very rapidly in both camps as you know. So, I think we ought to do that this year. We ought to have a certain set of policies and guidance that are common to those communities, because a lot of...there will be an enormous overlap. There will be many people doing Direct who are also large organizations doing exchange and vice versa.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, right now it's not happening at all is that right?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Today is a good start for some of that, yeah, but you're right there has not been communications, formal communications between Healthway and DirectTrust as a community until just very recently, today.

Michael B. Matthews – CEO – MedVA

...technical stand-point.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

Michael B. Matthews – CEO – MedVA

Technology, no.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Technology exists but is not used is what you're saying, right, currently?

Michael B. Matthews – CEO – MedVA

eHealth Exchange is not configured...its organizational purpose was for the query retrieve and other specific modalities, publications, subscriptions and so forth not the Direct. I think what Dr. Kibbe is suggesting is a lot of progress has been made on those and other fronts, and to my partner to the right here, it's time now to probably have more conversations across these various fronts to see where they can be leveraged and the synergy associated with those.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, do you see us having governance for every transport we come up with?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

No, but to the extent that we've defined the NwHIN as essentially being 2 forms of transport or 2 protocols with respect...there probably will be different governance components for that. Ultimately, I would like to see ONC create a governance environment that would cover and to some extent I think they've already done that but it needs to be formalized, cover both.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Thank you.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Gayle?

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

Thank you, very much and the more I listen to this the more I start quaking in my boots on where we go with the whole...where we're moving and the lack of conversation about meaningful consent and whether or not the patient will...the Paul Tang rule, I always go back to that, patients should not be surprised at who has been looking at their record and what they found out.

And I see a lack, to some degree, on that conversation on meaningful consent of the patient and the patient having control over what is happening to their private health information and I would like to kind of redirect us back to that to some degree and I get very nervous especially when we start talking about governance here, governance there, everybody setting up their own governance rules of the road and where this is going without some general principles in place that everyone agrees to it adhere to.

So, could you all give me just a little reassurance on the Paul Tang rule, patients should not be surprised there should be meaningful, knowledge and consent on the part of the patient?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

With respect to the DirectTrust community HIPAA is that framework. I mean, if one feels that's inadequate and there needs to be more than that's a policy issue that we would love to enter into but at this point there are folks out there who don't believe HIPAA should be effectively controlling the behavior of covered entities with respect to where they send and receive health information, we do.

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

There is also the question that Deven has raised; does HIPAA really cover some of this transport?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Well, if...

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

Under the privacy rule?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

If the organizations attest to that and then they are audited with respect to their behaviors, that's one way to do it.

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

For the conversation from vendors, from NwHIN?

Michael B. Matthews – CEO – MedVA

I'll speak to that wearing my Commonwealth of Virginia hat. The ConnectVirginia statewide HIE utility under direction of the Health IT Advisory Commission and the Secretary of Health has adopted a patient consent model on opt in, okay, so before any data can be transported across the statewide utility the patient has to opt in, very much the meaningful consent model has been embraced and we're going through a lot of work now to figure out what is the best communication mechanism and where should that communication occur.

We are actively looking at different ways to have that meaningful conversation occur between the patient and their physician and then we are trying to technology enable that to happen on the spot or to be able to go on-line. So, there are different ways to do that, but to your point, in that case the meaningful consent is not at an eHealth Exchange level, ConnectVirginia will be a participant in eHealth Exchange and that's where that meaningful consent is occurring.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Let me, let me perhaps, Gayle, it may be a little unfair to put the panelists, give them the full responsibility for ensuring privacy and security of all governance nationwide and just to make mention that this committee, these committees, the Privacy and Security Tiger Team have established many of those principles and through what we have put out as best practices, I think there is, and maybe I would just ask the panelists, a, you know, a pretty simple yes/no question, do you look to what comes out of this committee and ONC in terms for guidance, in terms of what should be part of the governance principles that you're talking about.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Of course.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

I think we're looking to the most restrictive and technical solutions which facilitate that.

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

So, this is not a...I think it's just important, Gayle, in all fairness a lot of what is being reflected there is within the framework and the principles that this committee, the Privacy and Security Tiger Team and our governance approaches have established and I think through the FOAs we're still in the process of reviewing those applications from governance entities for entering into cooperative agreements with the ONC, but that will give us a mechanism for continuing to engage with them and continuing to ensure that those reasonable consumer expectations are not...no one is caught by surprise.

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

Yes, thank you very much and I appreciate that and certainly that's the foundation on which we go forward, but I think that always needs to be part of the conversation because without that conversation the public is not going to trust us. And, I think we need to emphasize that. We need to always be prepared and we need to make sure that as we go forward we absolutely clarify that and that we make sure that there is that understanding.

There may be...as we have different entities setting up local HIEs and we are having that take place now and we're having state level HIEs in various forms, we're also having local HIEs that will be connecting, all of this needs to have that entire framework out there.

So, ONC has a responsibility and when it comes down to governance and where we go and certainly we're not...the decision was made not go down with the governance rule at this point, but I think at some point there needs to be very clear guidance especially down at the local level, at the vendor level, at the Direct level, at the NwHIN level whatever that these are the rules of the road. So, I'm just making sure we have that conversation.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, thank you, we are out of time, but Leslie Kelly Hall last minute, you get it for a minute, 1 minute.

Leslie Kelly Hall – Senior Vice President – Healthwise

Just quickly, of course my question is about the patient and being directly involved, providing patient generated data in the future. Chris you mentioned a large network of having patient's tethered portals or tethered devices. And in the future we'll have a Direct message potentially coming from a patient or from another HISP, or another organization. How do see that fitting in with the tethered PHR in terms of trusting that that patient is who they say they are and that you can take that information in a way that's actionable on behalf of the providers you serve?

Christopher Alban, MD - EPIC

Well, I think in part one of the pieces of this is that part of the My Chart structure allows a patient to untether their PHR. So, to truly create a PHR that maybe composed of multiple pieces that they manage. I think the challenge then is, as much as we talked about, does that patient...if they are going to be a source of that, I mean, the clinical point of care reality is, as I talk to the patient if I receive this data, I'm exercising appropriate clinical process in assessing this as much as I assess everything they tell me when I see them. So, there's that clinical reconciliation as opposed to just dumping it in there automatically.

So, that's one of the steps we've seen as a way to ensure that, you know, as we see with everything that comes in it's the same with a Surescripts feed or other information I'm applying the clinical sanity check at what I'm looking at as I evaluate that information, that's the current model. If we're looking at a model for doing more than that, obviously if they're getting a Direct address we may need to do some on-boarding as well for patients and maybe it's a completely abbreviated version that does something to validate that, I don't know that I'm technical enough to understand enough of the details as to how we would do that, but that seems to be a need as we would go down the line to that kind of a project.

Leslie Kelly Hall – Senior Vice President – Healthwise

Thank you.

Sid Thornton, PhD – Medical Informatics Director – Homer Warner Center for Informatics Research, Intermountain Healthcare, Salt Lake City, Utah

I would just add that there's this need for bidirectional feedback in general and that is missing and that's something that were trying to push forward.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Okay, Paul Tang, final, final word?

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Really quickly, trust is as we can tell is extraordinarily challenging. One of our backup methods is transparency. So, I'd be interested in each one of your organizations are the rules of the road for your organization posted on your website for all and have pointers, so every patient knows, gosh if my provider is going through that in between, do I know exactly what rules they are following?

M

Yes.

M

No.

Christopher Alban, MD - EPIC

I don't know for sure. I know they are certainly available to all of our customer entities, whether they specifically post them for patients or share them with patients as part of their treatment to consent, I don't know for sure.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

No, I mean, you're the entity that's conducting the transaction the exchange. So, does EPIC post the rules of the road?

Christopher Alban, MD - EPIC

They're not our rules of the road they're our customer's rules of the road. So, it more goes to their decision on how they would apply that.

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

And the rules of the road for DirectTrust are publically available and open.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Are or not?

David Kibbe, MD, MBA – President & CEO - DirectTrust.org, Inc.

Are, yes.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, thanks very much to the panel. I think we've left 11 minutes for appropriate bio breaks and we will reconvene at 3:00 o'clock, thank you.

MacKenzie Robertson – Office of the National Coordinator

If every can please start taking their seats we'll try and stay to the agenda time? Can everyone please take their seats?

Alan Merritt – Altarum Institute

Can everyone please take their seats? Thank you.

MacKenzie Robertson – Office of the National Coordinator

Committee members can you please take your seats so we can get started again?

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you everyone, this has been enlightening day. As we suspected, HIE is a bit hard, but also there is a huge amount of benefit in it and a lot of makeup work in terms of, we had not done care coordination for example very well, we've not done health information exchange, now we have the potential to and we're trying to see if both the policy and the technology can enable all that.

Farzad started off his introductory comments referring to this last panel where either as a last resort or as a proactive watch out for your own health kind of method, we have a panel that's going to talk about consumer mediated exchange and hopefully it will be simpler than having the providers do it as we've heard earlier today. So, we have four representatives and we will begin right away with Jeff Donnell.

Jeff Donnell – President - No More Clipboards

Well, thank you for the opportunity to address this group regarding consumer mediated exchange and I can recall going back five or six years ago sitting down with HIE professionals to talk about connecting with consumers and sharing data and received kind of a lukewarm reception at best. And HIEs were understandably skeptical they had concerns about some of the technical and policy challenges around things like patient matching and identification, and also frankly, I think some concerns about whether the value of an HIE might be reduced if each patient were to actually kind of serve as their own HIE. And to be fair, if you go back five or six years ago electronic patient engagement wasn't really high on the priority list of anybody on the provider side and promoting electronic patient engagement has been something of an uphill battle.

But if you fast forward now to January 2013 the landscape has changed dramatically and it is thanks in large part to the leadership of the ONC and to your committees. And Meaningful Use Stage 1 certainly put patient engagement squarely on the map, but now with the ratcheted up requirements for Stage 2 we really move from patient engagement sort of being a checkbox to all of a sudden now it's a Health IT strategy imperative.

And some of the additional initiatives coming out of the ONC, things like the pledge program, the model PHR privacy statement, education initiatives, those and other factors have really kind of pushed this to the point where we really are at a tipping point with consumer engagement and I'm happy to say that that tipping point actually extends to HIEs.

A couple of years ago the ONC started the Challenge Grant Program and some of the funds were designated for consumer mediated exchange and in Indiana we've actually used some of that Challenge Grant funding to work with five different HIEs, they all have a different business model and about a dozen pilot sites and we're making HIE data available to patients with a PHR and using HIEs as conduits for secure messaging.

And we have been working through some of the really thorny issues are things like patient ID, auth and match determining what data gets shared and not shared and what sort of embargo period you put around that, modifying data use agreements that really never contemplated patient involvement, navigating state laws around things like sharing data for minor patients and a whole host of other obstacles that really put the challenge into the Challenge Grant label.

What's exciting is that as we are sharing what we've learned, what we've experienced in Indiana with other HIEs around the country, the response has been very, very encouraging. We are working with other HIEs who are looking at statewide or communitywide patient portals and these HIEs do not view engaged patients as a threat, but actually see it as a way to add value and to contribute to their long-term sustainability.

In addition, we're starting to see that HIEs are looking at solutions that use things like Direct not just for secure messaging provider to provider but they're contemplating how do we plug the patient into that. We're also seeing that the ability for a patient to be able to populate a PHR or a patient portal with HIE aggregated data overcomes a lot of the obstacles that consumers have and especially when it comes to accessing data from a variety of different healthcare providers and we're hearing not just from patients, but now from providers "I don't want my patients to have to log into five different tethered portals and try to manage all that data" the idea of something that aggregates it all together is very, very compelling.

And I have to say that the work that the ONC has done in this space is helping to overcome some of the interoperability challenges and, you know, while EHR vendors, by and large, aren't eager to share data with untethered patient portals and PHRs they are willing, in general, to integrate with HIEs and they see that HIE can serve more as an impartial intermediary.

So, the ONC needs to continue to inspire to go, to prod, and in some cases to drag people in the Health IT community kicking and screaming to the patient engagement table. And what we see is that the work that you're doing is having a real impact.

Just in the last 60 days I've met with about a half a dozen HIEs around the country and they're talking about patient engagement using Direct CCDs, seamless interoperability, complying with Meaningful Use Stage 2 initiatives like Blue Button. So, the word is getting out there and even though we've seen tremendous progress there's still more work to do.

Just within the last month or so I met with a health system CEO who said "you know, I don't want to make it easy for my patients to access their data, I don't want it to be easy for them to go somewhere else." So, not everybody has gotten the data liberation memo, so we can't take our foot off the gas pedal.

I will also say that, you know, what we hear in terms of feedback from patients from our users is their biggest source of frustration is that they will take the time to aggregate data, to build a personal health record and they'll go to a provider who says "well, that's nice here fill out my clipboard anyway" and that is incredibly frustrating and that really turns patients away from the value and the power of these sorts of tools.

So, as we look ahead to Meaningful Use Stage 3 and beyond please keep the patient front and center and know that meetings like this, this discussion, the proposed rules, the PIN documents all of these things raise awareness, they move the needle, they alter behavior and I'm always amazed at how soon after a meeting like this where we have these discussions that things will all of a sudden show up in an RFP and it becomes a requirement. So, it is having an impact.

So, you know, what we're seeing is this concept of sort of the individual as a HIE which was once sort of this nebulous way off in the future concept is actually starting to come to fruition and HIEs who again were sort of anti-looking at this as a business model, all of a sudden are not only embracing the idea, but actively working on it and so the concept of having a truly engaged consumer coordinating care and collaborating with the clinician is here today and we're at a point where we can spread that at I think a much more rapid pace. So, thank you.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, MaryAnne Sterling, please?

Jeff Donnell – President - No More Clipboards

And by the way I do have to...do you have any questions, because I have to catch a flight back to Key West or my wife will kill me.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Right, so, let me ask...I thought it was at the beginning of this, the question period. So, anybody have questions for Jeff before he leaves to back to vacation?

Leslie Kelly Hall – Senior Vice President – Healthwise

So, Jeff, given your experience in working with multiple HIEs and multiple vendors, what is the single, maybe not single, first couple of barriers you have to interoperability, because you're sort of the outsider looking in in all of these different ecosystems, what's your advice?

Jeff Donnell – President - No More Clipboards

Well, we're actually very excited to see HIEs suddenly get interested in electronic patient engagement because it actually overcomes some of the primary barriers that we have and there's both, you know, the reluctance of many in the vendor community to want to share data electronically with anybody that's sort of outside of their walls, but let's face it it's also a technical challenge and, you know, the idea of individual patient engagement vendors having to go out and integrate with all of the, you know, literally hundreds of certified EHR vendors is not really practical.

And HIEs are already making those connections, they're already doing that integration work and they're already taking data from multiple sources and aggregating it. So, this concept of using that HIE as an intermediary, again, adds value, contributes to HIE sustainability, but these HIEs are saying, look we want to put in place a portal that doesn't compete with a tethered portal, it just compliments it and there is I think a great opportunity for co-existence.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Farzad?

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Jeff, if a year from now, every patient in every Meaningful Use accredited hospital and practice can go on-line and get a copy of their own records, they can view it, they can download it, they can transmit it to their own repository, if we make that happen as a community, what more will be needed, policy, technology, whatever, business models to enable patients then to share that back with whoever they want to share it with?

Jeff Donnell – President - No More Clipboards

Sure, well, I think there's a couple of pieces. So, you know, certainly giving patients easy access to their data is a huge step in the right direction and we're big proponents of sort of crawl, walk, run. So, we're crawling and actually starting to walk now. But, if you look ahead, yeah, we do need to make it easy for a patient to be able to share their data, to direct it, and perhaps more importantly for providers to be able to consume that.

And a big part of that, you know, there's certainly some standards work that needs to be done, you do have to be able to put in place the mechanisms, but I can tell you we are working right now with providers around the country where they are bringing in patient generated data, they're using some simple toolsets to compare and reconcile here's what the patient has, here's what we have in our electronic health record and we can selectively import what we need and leave behind what's not appropriate and that's often done with the patient present, because you will...as you go through a process like that you will identify some of the differences where a discussion is warranted.

But, from a technical point-of-view it's not difficult, you know, there is policy and standards work but much of it is education. You know, we encounter providers who are so fearful of patient generated data but when we talk to them about, well, how do you handle patient generated data now, I mean, you're having people fill out a paper form in a waiting room and then you're having someone rekey it in, are you saying that that data collected in probably the worst possible environment is better than a patient bringing it in from multiple sources and being able to make it accessible? And as you have those discussions then the light bulb goes on, but, again, you know, there are 15 questions like that and some well grounded fears, but a lot of it is just fear of the unknown.

And those conversations can't start soon enough. So, again, I think that's where the ONC can help and there are already workgroups that are addressing these things, but right now those are small groups and we need to be able to broadcast that and let people know that this dialogue is going on.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Great, thanks, Jeff and Bon Voyage.

Jeff Donnell – President - No More Clipboards

Appreciate it.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

All right, MaryAnne Sterling, please?

MaryAnne Sterling – CEO - Sterling Health IT Consulting

Good afternoon, my thanks to ONC and both committees for the opportunity to speak today. “I am not getting good medical care” this is how a conversation began with my 82-year-old mother, a retired nurse, two weeks ago. Culprit number one, lack of response from both her primary care doctor and cardiologist after she called them to report an allergic reaction to medication, and culprit number two, a complete breakdown in communication between primary care doctor and pharmacy. The pharmacy could not refill critical medications for almost a week including heart medication until reauthorized by the non-responsive primary care doctor, just another day at the office for frustrated patients and family caregivers.

The idea that mom’s primary care doctor, cardiologist and pharmacy are even close to working as a team and exchanging information to improve her healthcare is a work of fiction. Frankly, I’d be happy if they simply exchange phone numbers. I function as the reluctant health information exchange for my mother. I am typically pressed into service when I get the 3 a.m. phone call that she has been rushed to the emergency room. Here’s an example.

Last year at this time mom fell and crushed her right arm. Invasive surgery to repair her brittle bones with plates and screws was not an option. After 10 days of caring for her in our home, my husband and I successfully got her admitted to an inpatient rehab facility so she could relearn how to complete her activities of daily living while she healed. The nurse assigned to her began the intake process by asking her an obvious question “what medications are you taking?” My mother, heavily medicated for pain and suffering from mild cognitive impairment was not able to answer this question with the clarity of years past.

I quickly stepped in and presented the nurse with a spreadsheet that I had created, a detailed medication list that included important data like drug names, dosage and time of day administered. The nurse evaded my attempts to hand her this sheet of paper and returned to her tactic of trying to extract the information from my mother. I chimed in when mom faltered and was all but ignored by the nurse. It quickly became clear since I was not the patient I had no credibility.

This painful exercise went on for 45 minutes, ditto for mom’s medical history. Frustrated by this ludicrous behavior I found some scotch tape at the nurse’s station and I taped my spreadsheet to the wall of her room. I was going to be part of the care team by brute force if necessary after all I was the one who would be responsible for her continued recovery upon discharge.

Speaking of that, I prearranged with the staff to be present at a specified date and time when discharge instructions would be communicated to my mother. When I arrived I found that the nurse had started without me and was halfway through discussing a pile of paper that was 35 pages deep. My mother’s expression indicated that she understood little if any of the information being conveyed. I informed the nurse that we would be starting over again and stood my ground when she protested. I suspect they opened a bottle of champagne when we left.

This is just one of countless stories I could share with you, the culmination of almost 17 years of being an only child supporting my aging parents, combined my husband have 3 out of 4 parents diagnosed with some form of dementia. In general I find that attitudes toward family caregivers are extremely guarded if not hostile within the healthcare delivery community.

It is rare that I find a clinician who welcomes the information and insight I have to offer about mom’s health. I find this mind-boggling since I have been my mom’s copilot through two battles with breast cancer, countless broken bones and numerous chronic conditions.

I can recite her medical history with far more clarity than my own. When I try to gather and organize mom’s medical information and test results I’m frequently met by the HIPAA roadblock that is erected in my path. As Jodi Daniel gently reminded me several weeks ago this was never the intent of HIPAA.

In theory if I could easily access and aggregate the information from all of mom’s providers electronically, I could help identify and troubleshoot potential problems more quickly and effectively before they become a crisis.

But, information alone will not address the people and process issues that we currently face. More importantly, we have allowed a culture of intimidation to become ingrained in the fabric of healthcare. We tolerate poor communication, antiquated processes, the complete absence of collaboration and the use of complex medical terminology that nobody is willing to translate into normal human-speak for patients and family caregivers.

Thus far, new regulation and policy have had zero impact on these issues. A staggering amount of culture change is needed to reinvent our healthcare system and replace it with a collaborative health ecosystem that is patient and family caregiver centric.

Technology is not the problem. We will soon have mountains of technology in place just waiting for data to begin flowing, but if we do not solve the people and process problems in parallel with the implementation of technology we will not have removed the biggest roadblocks to improving our healthcare system. My mom will still be waiting for better quality healthcare and the family caregiver will still be the most underutilized resource in healthcare. Thank you.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you. Neal Patterson?

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

Thank you. So, I'm going to summarize MaryAnne's points here which I thought were very good. So, it's hard, complex and ambiguous at best, it's too important not to change and it's personal. So, that's basically healthcare in a nutshell those are, as MaryAnne, knows a very good broad description. Thanks for the opportunity to come here and share some thoughts on this wonderful, beautiful afternoon. Have you been outside? So, you all are very committed to be here versus there.

And it's a challenge...some of you know me in the room, so I'm an entrepreneur and to ask an entrepreneur to speak for 5 minutes is a little bit of an oxymoron, but there are three things I really want to just touch. So, I want to talk about a privilege, an obligation and a challenge.

So, first of all I think it's a privilege to be part of the generation that is really going to digitize the content of an entire industry and it's not just an industry, it's the largest industry in our society and it's the most connected, ubiquitous industry, so...and it's hard, complex and ambiguous at best. So, it's an opportunity that I think we're at the very beginning of it and as every industry that's digitized the content there is always going to be unanticipated, but fundamentally transformational second and third order effects.

So, a lot of the complexity just around the frameworks and models that we collectively are struggling with here today those will get solved. They will not be perfect, but there will be amazing progress over the next 10 years. So, I think it's a privilege to be part of it.

Second is the obligation. Healthcare, as MaryAnne did a very good job of describing, the lubricant of healthcare is information. The information though is about us as individuals so it's personal. So, it's going to be about us and that information in certain context becomes very life, it either creates a better experience or it creates the right diagnosis, or it creates the right treatment plan. So, we, as we, those of us that have the privilege of being part of digitizing this industry also have an obligation, a moral obligation to make sure that that data is liquid.

Subject two, privacy and security. So, there's a lot of discussion here about whether it should move or not, it is beyond question there are so many places, based on the complexity of healthcare you have to move and for people, organizations, entities to use business models and business interests to create strategies around keeping data from being liquid is immoral in my personal opinion.

So, third is the challenge. So, this is Farzad does not like this subject, but we're the only country, westernized country, that doesn't have a national ID. For us to create the liquidity, we have to make sure identity is positive. So, now I'm pretty damn sure that neither side of the parties in this country are going to solve that. A national ID service is something that has to be solved and I do believe we can solve it from this room. So, in closing and I'm actually inside the 5 minutes.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

You did good.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

My closing thought, this is a very critical time for what we're doing collectively. Breaking the trust and I really did enjoy the fact that trust was just a major theme, thread and thesis throughout all the presentations I heard, we cannot break the trust right now. We have huge obligations. We have huge challenges, but we have to keep the trust.

So, the work you're doing, you know, on both committees here is incredibly important and I probably couldn't...I probably am not designed to have the patience to sit here and do it nor probably have the skills, but thank you very much for doing it.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, thanks, Neal. Alan?

Alan Blaustein - Founder CarePlanners

Thank you, I thought Neal was going to take a few extra minutes and I be...the room. Thank you, all first of, it's been a long day, I don't know if I'm the last person up or if Fiona is up, it's beyond commendable what this group of people does and I've said it before to Farzad and Farzad's team, this is the way government should be working. This is a testament to moving things forward in an industry that has been extremely complex for years and the complexity is not going away.

I approach this group of two committees as a patient first and an entrepreneur second. So, I don't know if that means I'll go over the 5 minutes or under the 5 minutes, it sort of depends and I'm somewhere between MaryAnne and everybody else within the group.

I was diagnosed with cancer in 2005. I found myself with 8 different doctors, 4 different institutions, 12 different medications, a fight with the insurance company, which could not find my diagnosis on a drop down menu and a partridge in a pear tree. I was overwhelmed and there is not a person in this room that hasn't experienced that as either the patient or the caregiver and coming out of that and watching the hundreds of other patients and caregivers that would be in the bedside next to me or would be the doctor's office next to me the complexities of the system on a micro level are beyond belief. And I believe everything that we're talking about here from a macro level makes a lot of sense, but I do, again, want to bring it back down to the micro level because everything is personal in healthcare.

Out of that experience, one of the things I really wish I had was a guide or a mentor to help me through the system, to help me navigate the system not even from a clinical stand-point but from an administrative stand-point. You know, I looked at it and I said, you have the legal industry and you have a legal issue you wouldn't go to court on your own or you deal with taxes or tax issues you probably wouldn't do that on your own. You needn't deal with your healthcare issues on your own either and you need further advocacy.

So, we developed a company, and my partner Dr. Nancy Snyderman and myself, named CarePlanners and to work through how the ONC has fashioned the conversation around healthcare information, they speak often about access, action and attitude. And I think it has been beyond commendable and an incredible testament, again, to this group and other groups like it that the access is starting to happen. That the information is starting to flow, it is still not flowing between organizations mind you.

My CAT scan from a very reputable health institution in New York cannot be read in the health institution across town. There are competitive pressures that will have to be addressed in some way, shape or form, but we all know that that's the issue and that's part of the attitude.

The area where CarePlanners is really focused on is the action, because we can make 500 pages of documentation available to every consumer that's out in the marketplace, what are they going to do with that? I might as well just give them, you know, a Chinese dictionary and just tell them to start reading words to me and it is in that action really where most people need the help and what we do within CarePlanners, what we're seeing other organizations do is, yes we put a human element back into it in the midst of all this wonderful technology to help make sense of the system, to help you get to your autobiography of healthcare.

You know, I had 8 different doctors, I had different personal health records. Anybody right now in this room who thinks that technology is just going to seamlessly integrate all those together without the human element, it's just not going to happen. You know, there is no algorithm for the healthcare system, it has not yet been developed and until then you need additional human interaction with it.

The phone calls that we've been getting and I really did want share on this level, Farzad, first of all everybody's been great about sharing the information, although I will tell you one challenge is HIPAA. HIPAA at the micro level, if you call any office is the immediate excuse for laziness. If I do not feel that day like I want to provide you the documentation HIPAA, thank you, call back tomorrow. After I call 5 days in a row with all of the right forms HIPAA, HIPAA, it's like there is another person in the office named HIPAA that they keep calling for. I know that that's not the case, but that is what it seems.

There are some challenges to HIPAA. With all respect to the privacy and the security and everything else there we've put within the system an enablement within the system to make it very easy not to share. I take my flash drive from one hospital to another hospital with my records on it they will not put it in their computer for fear of HIPAA. These are not community hospitals, these are nationwide nationally recognized cancer centers who will not share the information and we all know it's for competitive reasons, it's Coke and Pepsi, right? Medicine is altruistic there's nothing altruistic about the business of medicine. And I think that's one of the challenges here and the immorality that Neal pointed out.

I think also, and I know I have 13 seconds left, in terms of a challenge and give me a moment or two, I don't really think the consumer has any clue what the healthcare system wants of the consumer. Has anybody here sat down to write down what a prototypical consumer should be? Should I be directing my healthcare information or should I be mediating my information? Should I have a knowledge-base in my conversation with my doctor or should I be passive?

So, when you speak about communications over the next two or three years, I don't know what to tell anybody of what is expected with me in the system and that goes down to every provider level. There are providers I'll walk into as an educated consumer and they will kick me out, they don't want to deal with it and there are others that absolutely hunger for it.

So, Farzad, one of the things I could really ask of the ONC is what do you want the consumer's responsibility to be? And then from a consumer stand-point, and believe me, the consumer is sturdier than we all think, they're not going to fall over. The consumer is allowed to have responsibility and the consumer is allowed to be put on a bit, I think it's more put on for the consumer to say, hey, we direct your medical records like your an air traffic controller, than it is, here's your responsibility but in turn you're going to be part of the action.

So, I think once we can figure out what you want the consumer to be then we just really have to very intelligently and succinctly communicate to the consumer what that role is and so my time is up so I'll stop there.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you and Fionna are you on the phone?

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

I am, if you can hear me?

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Yes, go ahead, thank you.

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

Okay, I don't think you got my bio so just to explain who I am, I'm Fionna Granger, I'm the First Assistant Secretary for eHealth in the Australian Federal Government, Commonwealth Department. To give you some context on Australia today we have 18% of medical errors that occurs by inadequate availability of patient information, 15% of adults who have interaction with the health system reported their diagnostic test results are not available. We're very mobile in our small population there has been 260 million...away from home.

A third of our general practitioners see patients for whom they have no current information and over 7% of their diagnostic tests are unnecessary or duplicates. Like America we have an aging population and we'll be moving...we'll have moved from 11% to 13% of our population over 65 between 1990 and June 2010.

So, for Australia there was a very clear case for investment in better availability of patient information in our health system. The Australian governments collectively federal and state have been investing in health records for 10 years and in 2005 they created a nationally health transition authority specifically to support the development of standards and specifications for the better health flow of information.

In 2010, and I noticed one of the other speakers referred to the healthcare identifier service started, which provided unique healthcare identifiers for consumers, healthcare providers and healthcare organizations that was a very key first step. Also in 2010 the national government provided funding to build what we call the personally controlled electronic healthcare system and that was the beginning of the program that went live on 1 July last year.

To give you a brief overview of the design it provides a secure summary of a patients...can people still hear me, it's very quiet in the background? Hello?

M

We can hear you.

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

Oh, good, okay, it's just very quiet. Okay, Australia's eHealth record is a secure summary of the patient's health information that's provided over the Internet to consumers and healthcare providers at the point of care. Consumers opt into the system by registering with the PCEHR systems operator which is...and I'm the Sydney bureaucrat that runs the system.

Patients decide what goes on the record and provide a standing consent to information to their healthcare providers. So, information held on the record of the moment is demographic information, emergency contacts, location of their advanced care directives if they have one and consumers can enter key information such as medications, medical history, allergies. There is also, as their healthcare providers connect, a shared health summary produced by a primary healthcare provider such as their GP depending on who is leading their care, which includes allergies, adverse drug reactions, medications, medical history and then even summaries can be added such as referrals, specialists letters, hospital discharge summaries.

We've also loaded with patients consent existing information held by Medicare which is our government system for supporting healthcare so that would include for the last two years doctor's visits, some medications for children under 7 their immunization history and their organ donor status. And it's basically a national system, it provides portals for healthcare providers and patients to view the data and for the patients this will be the first time they would have seen their medical history quite often and it's also though designed to connect to the clinical systems of the healthcare providers. So, for example, for a specialist they can be accessing it from the desktop their specialists room or in the hospitals that they visit, which may be a mixture of public and private hospitals.

We are taking a very staged approach to the roll out. So, the national infrastructure was ready in July, a number of the clinical desktop providers, particularly for general practitioners, have just passed what we call notice of connection testing over the last month or so, which is the process to make sure they can securely and safely connect to the system. So, we've had very little promotion of the system to date.

We just passed 50,000 or just about to pass 50,000 consumers entering the system, most of those 80% have registered on-line, about 15% on the phone and 5-15% assisted by a healthcare organization. They have created 7,000 records so far. We have over 3.6 million Medicare records and we're very close to the first 1,000 healthcare provider organizations and we expect that to increase quite dramatically by the 1st of February because we have an existing incentive for primary care providers particularly and we've change the criteria so that it includes connecting to the system.

And there are varying software vendors who have a mixture of GP critical systems, hospitals systems and an...vendor. We have, as we started to promote the system, increased our daily registration rate from about 120 a day with no promotion to just over 800 a day as we're using...in Australia people have a card they use to claim healthcare benefits and we have provided more information about the system as those cards get renewed, so a fairly slow and soft promotion so far.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thank you.

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

So, I think I'm quite under 5 minutes, I'm happy to take questions or add more if you would like.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, very good, thanks Fionna. Now, we've concluded the panel opening remarks, let's open it up for questions from the committees or comments. Farzad?

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Well, if I may, ask the same question I asked Jeff, of the remainder of the panel is let's assume that the access piece we can address through a combination of HIPAA, Meaningful Use and, you know, the various pledges and what did you call goading, dragging, whatever all the different ways in which we can encourage providers, covered entities, health plans and others to let patients who ask be able to get an electronic copy of their own data in structured format. What more will we need to do to make that be an HIE of one? For me, if I choose to, to be able to take that information and share it with whoever, share whatever parts of it I want with whoever I want and have that be our quickest way to get to scalable national health information exchange?

Alan Blaustein - Founder CarePlanners

I think from the stand-point of an HIE, if I can just answer the question, Farzad, sure I think that that accomplishes the objective of getting a sheet of paper in everybody's hands. I don't know that you've quite educated anybody on what they should do with a sheet of paper, what their role is with that sheet of paper and frankly for a lot of people...and I'm not saying, again, for where we're headed as a group here, for a lot of people then all of a sudden to be responsible on top of everything else for their own healthcare information, you know, sort of it feels a bit inverted in terms of what the opportunity is for them.

Yes, great they control their information but now all of sudden they're being called upon while they're going through illness, while they're going through care giving, while they're going through anything else the added burden of then making sure that they've actually sat down and shared it with the appropriate parties. But, sure you definitely accomplish what you're looking to accomplish in terms of getting into people's hands.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

I would take that step forward and there will probably be an ecosystem of companies that form around there to complete the thought, curating, you know, complex records from multiple organizations is a huge issue, very few consumers will be able to do it. So, it's a great country, hopefully the entrepreneurs take over.

MaryAnne Sterling – CEO - Sterling Health IT Consulting

There's a huge education component to this that I think is the most troubling for me and that's not to say, I mean my 82-year-old mother is not going to be participating in this process in her lifetime, but, of course I do, but even with my own peers the idea that, you know, people who don't have a background in healthcare and medicine even can understand that, you know, once they have information in their hands that's great, but as Alan alluded to, then what?

You know, we have to train and educate 315 million people about what's next. How do you navigate the healthcare system because that navigation is not going to become all that much easier just with data. You know, we as family caregiver I have to juggle my own doctors, my mom's doctors, a hospital that, you know, she's been there 20 times they still don't know who she is, you know, I don't think these problems are going to just disappear.

There is an educational component here that starts with our populous and likely will have to start in grade school so that people, you know, as kids grow up with this they'll understand it. But there is a huge roadblock with our populous right now in my opinion.

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

From our perspective two things, one is I agree absolutely that education is important and we've provided a whole broad-based learning centers for both patients and providers on our record. The other thing we have in place is the concepts that your primary care doctor will help to write the record for the summary, because the feedback from a lot of our healthcare providers is they also drown in the wealth of information about patients.

We also have, as part of our access controls...I too have an 85-year-old father in the healthcare system here with the liberal interpretation of his doctor's advice but both my sister and I can also, with his permission access his records, and also with his standing consent arrangements if he goes into emergency room unconscious those records can also be accessed so that you don't have the problem of the patient arriving without context and being unable to speak to you when they arrive.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, Doug?

Doug Fridsma, MD, PhD, FACP, FACMI – Director of Standards & Interoperability – Office of the National Coordinator

So, just...so, I appreciate all the comments. I think one of the things that becomes really clear and we need your help to try to sort this all out is that Meaningful Use is about electronic health records and physicians, but patients are not the thing to which the healthcare system operates on. Patients and their families are part of the system and we have to figure out how to navigate that and I think, you know, Alan, I sort of turn the question around, what do consumers, you know, we can tell them what they need to be if we just simply say "you're part of the system how do you want to interact in that system, what are the ways that we can empower you?" It's a continuum.

There are some folks that say "listen I'm sick I don't want to have the responsibility to be my own health information exchange" and we need to have services that are going to be able to be sensitive to that as well. But, at the same I think we have to try to figure out, well, it's not paternalistic, it's not as if patients are the passive receivers of healthcare, they're the active participants in the healthcare system.

So, we need you folks to help us thread the needle, if you will, with that and provide perhaps options and a continuum, because I don't think we're going to have a one-size-fits-all for the consumer, you just are going to have to help us.

Alan Blaustein - Founder CarePlanners

I 100% agree. Maybe you need a Meaningful Use for the patients and maybe doctors are expecting different levels of patients in the system, and maybe there is a continuum. But, I strongly believe and I agree that the patient, the caregiver they are part of the system, I just do not know how to better integrate them into the system at this point at a level at which they are comfortable and the system is comfortable.

So, we speak about, you know, Meaningful Use and we speak about that, to your comment, you know, that's really more directed physician oriented and sort of the push of information. Maybe there needs to be a Meaningful Use from a receipt of the information too and how somebody has to participate. And, I also, again, I think that you'll find patients and caregivers of every capacity and all of us handle healthcare differently, I assume this group though is fairly aggressive about their own healthcare so maybe we're not all that representative of the populous, but, you know, I look again at healthcare generally and I look at the populous generally and, you know, healthcare should be a right not an entitlement and to me the difference there is with the right life, liberty, pursuit of happiness you have to give to get a little bit.

So, maybe crafting some Meaningful Use initiatives, I don't know if that's the right wording or not, but just some basic level of understanding for the consumer of if you participate here's what you can actually get out of it and the role that you can play I think should be part of the conversation.

MaryAnne Sterling – CEO - Sterling Health IT Consulting

Doug and I would answer that question by saying that we really need to rethink how we view the family caregiver in this country, because I promise you, and this may sound a bit bold, but where it not for me my mother would not be here today without my intervention in her care and I've lost one parent to Alzheimer's disease already, so my role has become critical in the well-being of a whole lot of people and there are a lot of...I'm not alone, right? There are estimates between 44 and 65 million caregivers in this country and we don't really have a definition, you know, we are ignored by the healthcare system as a whole.

It's so bad that there are people who do what I do who don't even identify with the term caregiver, they can't, you know, that's not a role that they can embrace in their heads even though that's what they do every day. We need to make the family caregiver give them the...we need to make this more mainstream, you know, this is our culture now has moved, you know, look how many of us are caring for our aging parents for goodness sake just that group alone of which I am part, is gynomous and it's just getting bigger by the day.

We need a better defined role for the family caregiver and how they interact with the healthcare system and what, you know, rules above the road I guess, rule of the road for the family caregiver here are some things that will, you know, if you take on this role for your family member, your parent, your child, your spouse whoever, here's what you can expect, but here's how our system is going to support you in that role.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

I have a comment and it's not necessarily concurrent with the previous comments, but first of all I think we've got a lot...the patient isn't part of the system, the system is there to serve the people in the communities and everybody in that community, none of them want to be a patient. So, there is just a little bit of the premise of the question that I've always tried to argue that the word patient is a status and it defines a relationship, it isn't a noun, it's a modifier to us as people.

I actually in the health systems level the word member is better, because there is...that kind of inverts, you're there for service and if you're lucky you have people who want to join and use your services. So, there's kind of a...I think we've got the nouns messed up here. So, the patient is something nobody wants to be and they're not part of the system, the system is there for them.

So, I think the family care giving is additive to the discussion. I don't think it's central, I mean, you know, it's fairly well known, you know, I'm a caregiver in a major way. We all, you know, if we're fortunate enough we will be, but, you know, the concept of a system...we really need to put...we need to create a system out of healthcare and it's there to serve us and we as individuals should be entitled to get our information.

I'll buy into the one, just get it out and I think there will be, if there is needs beyond that...I mean, I believe in the market-based system, so I think the market will form services for that if they are value-added and I know there are a lot of broader issues with that, so with that I will land those comments.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Thanks, David?

David McCallie, Jr., MD – Vice President – Cerner Corporation

We've heard a number of cultural and social barriers to the role of the patient as the provider of information to the system when they bring that information with them. I wonder, are there technical barriers that as a Standards Committee we could work on for example, do you run into the excuse of the data not being accepted because they don't trust that it hasn't been tampered with. Is the ability to kind of make the data tamperproof of value at this stage in where we are at or are these issues so much more fundamental that that's just icing on the cake?

MaryAnne Sterling – CEO - Sterling Health IT Consulting

For me the answer to that is complicated, you know, when a clinician, a nurse, a physician, you know, doesn't want to hear what you have to say, will not take that spreadsheet of medication information, you know, one of these days I've got to get around to asking them why not, you know, because so often when we're in these situations, right, we have a very ill family member and we're trying to get results, I don't often, you know, interrupt that process for fear my loved one won't get care, you know, I don't stop the doctor or the nurse and say, "um, excuse me I have a spreadsheet what's your problem" you know, because I'm afraid they'll take it out on my mom.

So, you know, again I think its several fold, they're afraid of the liability of taking that information from a source if they don't know me, they don't know me, they don't know anyone else either. So, why wouldn't they take the information, but that's it, I think they're afraid of liability that there aren't enough letters after my name like MD and PhD therefore I can't possibly know what I'm talking about. It does boil down to cultural barriers that we're going to somehow overcome.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

I think its icing.

Alan Blaustein - Founder CarePlanners

Yeah, I agree, I agree with MaryAnne's comments completely. I think it's the bigger issues that will be icing.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, Gayle?

Gayle B. Harrell, MA – Florida State Representative – Florida State Legislator

Thank you very much and being a caregiver for first my grandmother and now my 95-year-old mother I totally understand your situation MaryAnne and can empathize with you tremendously and I'm fairly knowledgeable about the healthcare system too, so it is always challenging at times, but I think certainly electronic health records and health information exchange can facilitate your role as a caregiver if you have the tools in place to do that and I think that's where we need to be thinking is how we empower you through the tools that we have and through everyone having, hopefully very soon, a health information record and also facilitating your access to that and your ability to comprehend it.

So, I think ONC plays a significant role in that education through websites, through whatever so that the caregiver, and we're holding our physicians and our providers accountable to help inform and make sure that those caregivers get the information, but also we have another role, I think, to help educate as well, but the private sector does too. And, you know, your innovative ideas certainly are what's going to make the big difference in the long run.

And my question really is, what barriers are there in Health Information Exchange and also in personal health records that this perhaps this committee can address given privacy and security, which as everybody here knows I am very concerned about, but how do we structure that so that you can have that essential tool in a personal health record that coordinates all those things coming from the 10 different doctors you've seen and pulls them in?

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

This may not be the direction of your question per se, but I do think, if you will, the measurement count and the narrative counts. So, and we have to have interoperability in this country as far as information to make it liquid and intraoperability shouldn't count. You should expect interoperability. So, what you need to do at the policy side is to ensure there's interoperability.

Alan Blaustein - Founder CarePlanners

Inter you said?

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

Intra, excuse me, inter.

Alan Blaustein - Founder CarePlanners

Right.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

Thank you, Alan.

Alan Blaustein - Founder CarePlanners

You're welcome.

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

From our perspective the real critical thing was getting one standard for all the healthcare providers, all healthcare software providers in the system and through a process of making sure that they could connect software safely, which gave the way to interoperate, but also meant that innovations they have in the way they present data and so their clients could still be maintained.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

John?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

So, as I was talking to Neal before his testimony, the Standards Committee and the Policy Committee folks know that my wife was diagnosed with breast cancer last December and that diagnosis occurred at a suburban hospital and she was told to hand carry a DVD from a suburban hospital to the downtown hospital where she was going to be treated.

Now Meaningful Use does require us to have images that are viewable through the EHR and a future stage of Meaningful Use may include more image interoperability and I think to the themes that people have been discussing sometimes the patient would ask that provider to provider exchange be used, and although DICOM is a wonderful standard, every institution implements DICOM slightly differently and so we've seen the emergence of cloud-based provider to provider image exchanges.

The challenge of course is that depends upon every provider having such a thing in place and so the challenge with my wife is, well there was a receiver that could actually get the images but there in the hospital no way to send it to the receiver. So, as I was showing Farzad, so using the purely, the Direct protocol this is my chest x-ray, oops, well sorry, I touched a button, here we go, there we go. So, this is a cloud-hosted zoomable, panable and white/black balance, HTML5 available chest x-ray, sent via the Direct protocol to Health Vault.

You know, well, it's probably good enough for a primary care doctor and so I...as you guys have suggested, there are times when provider to provider would be okay, but if using Direct and HTML5 and no other software than a browser, the patient can share images as they will instead of having to drive them from place to place. So, I want to see both.

Alan Blaustein - Founder CarePlanners

So the record too?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Right.

Alan Blaustein - Founder CarePlanners

You would get the medications so the spreadsheet has to go.

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Okay.

Alan Blaustein - Founder CarePlanners

I carry two bags for my wife, so. To that point I do think that that's where challenge of interoperability comes in. I mean, the chest x-ray and whatnot fairly easy to move back and forth as you move downstream on the record, medications, protocols, notes, other pieces of it making those interoperable, making those available at certain levels, it's still a challenge.

I mean, I cannot move my records from one really well known cancer institution in New York to another really well known cancer institution in New York, their software is not compatible, their interests are not compatible and there are discrepancies in the two records and I can't get anybody to fix the discrepancies. So, to Neal's point it's absolutely interoperability, absolutely.

MaryAnne Sterling – CEO - Sterling Health IT Consulting

...that you said I think you guys could address too, maybe. Let me give you a little example, my mom with her crushed right arm, when she was in inpatient rehabilitation we actually, my husband and I carted her back and forth to our orthopedic surgeon because, for many reasons, but we were continually faced with "oh, Ms. Sterling we can't do an x-ray here, you know, she's in rehab now you have to have the x-ray done there" really?

I just carted my mother 30+ minutes from an inpatient rehab facility, did all the medication reconciliation when we left the door, walked into an orthopedic surgeon's office, who's care we were comfortable with and he's sitting there telling me "oh, no we can't do an x-ray, darling, you know, you've got to go back to the inpatient rehab, so they're responsible for her now."

Those are the kind of strange process things that need to change. Who cares who did the x-ray, you know, it speaks to a larger issue of one provider won't look at another provider's test results, "oh, no got to redo those." Surely we can do something about that.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, I have Leslie, Arien, Dixie and then Claudia.

Leslie Kelly Hall – Senior Vice President – Healthwise

Well, thank you all for your testimony. I would caution us as we go forward with "shoulding" on patients, this is a "shoulding" you know, patients "should" do this, patients "should" do that. Sorry, I woke you up, I woke everybody up.

You know, this is a group that's been largely disenfranchised for knowledge about their own health only...very much marginalized and now we're trying to build an ecosystem and include them and I don't think we should start with "you should." I think we should start with "we should" respond to the patient's needs better. As people become more informed in any field they become more active and engaged, we do not need any more excuses to keep the patient out of it.

So, having said that, I would like to ask some questions about, particularly Neal you're very much about the entrepreneurial ecosystem and how that responds and yet, we've heard all day about the financial incentives. Consumers in other industries have largely participated because their involvement reduced cost of the people providing the services from travel to anything else. That model seems to be good enough in banking, we don't have as many tellers as we had in the past because I as a consumer am willing to do more work on-line. I might pay \$3.25 for every \$50.00 I take out at the DC Airport, but when I go to Wells Fargo I don't pay for it directly.

So, can you speak a little bit about how you perceive this ecosystem when in fact everybody else has said, hey patient participation, consumer participation lowers our cost that's good enough, why hasn't it happened?

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

My earlier comment that there...I think we're at the beginning of an era where we're digitizing the content and there will be a lot of second and third order effects that will be much more transformational than this. This feels like a cloud of dust and a whole lot of laying pipes. I think part of that are the business models of the providers, part of it is the true lack of data liquidity subject to privacy and security. So, I do believe when the data is liquid, subject to privacy and security, I think there will be...and there's value to be created and it'll be early adopters, you know, natural kind of Bell curve of demand of service.

So, if there's real value there's a lot of people that would participate actively and we'll get engagement of the member/consumer/patient whatever your preferred noun. So, I just don't think that we have the data liquidity right now.

Leslie Kelly Hall – Senior Vice President – Healthwise

Okay, thank you.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

I think it's early. I think, you know, John's work he's done some important work, I mean, so... and that's very entrepreneurial, John, and for an academic, you know, that's actually very impressive. So, it'll happen and then, you know, it happens in the university, you know, first and, you know, so the question is there a business model for providing that service to consumers and members and/or providers that actually have financial incentives. So, we've got a highly complex system here and it's hard, it's complex and it's ambiguous at best.

Alan Blaustein - Founder CarePlanners

I would absolutely second what Neal just said, having been an entrepreneur in other spaces, Internet, media and entertainment and watching some of those systems come to terms with change and ultimately data liquidity of some sort or other the technology is able to move forward. You are seeing the early stages of a very robust healthcare entrepreneurial movement.

It's early and this is a more complex system than any of the other ones that I've been involved in, which is clearly going to slow the path down. But, I think to Neal's point is the seminal point, the work that this group is doing to make the data accessible is what is going to allow the marketplace to explode with opportunity and again, that will hit the tipping point and move it forward.

So, even as I sit here today and bemoan the situation from the patient's stand-point I think without the efforts of this group around this table what's going to happen within the next five years could not possibly happen and I think it's going to be fantastic.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, Arien on the phone?

Arien Malec – Vice President – RelayHealth Clinical Solutions

Thank you, it's me maybe pulling a Wes and so I'll try to turn it into a question. What we started off the day with was a reflection that business models are changing and that business models are actually driving organizations to enable interoperability and I think what we're hearing in this panel is a sense that those business models aren't yet working for the patient and so I want to follow on Neal's comments by first commenting and then I'll try to turn this into a question.

First commenting that, you know, we've designed a system that is optimized for the physician convenience and physician access. We need to turn that around and optimize for patient access, and the second comment being, as Neal noted, that optimizing or allowing data liquidity and allowing the sort of foundational standards will have the secondary effect of designing new ecosystems.

And so, as I said, to try to turn this around into a question, what from a business model perspective, a healthcare business model perspective would the panel most want to see that enables the healthcare ecosystem to treat patients truly as the people they serve as the members and invert the business priorities, because I guess my gut feel is that we can do a lot in policy, we can do a lot of standards, but if we don't change the incentives and change the business model we're not going to get a system that serves patients in the way that we want that to happen.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes, thank you. I do want understand some of the physician concerns about the data moving from a regulated environment into an unregulated environment and then perhaps back into a regulated environment, I understand that and so my question is really building on top of what David asked a while ago.

Is there concern on the physician's part or the provider's part regarding the data provenance and integrity and the specific question is would it be helpful to have the downloaded C-CDA digitally signed by the physician before it's downloaded to the patient, would that make it more acceptable for that patient than to give to another provider?

MaryAnne Sterling – CEO - Sterling Health IT Consulting

My answer to that is yes because it would take the onus off of me having to prove that data that I am handing a provider is indeed reliable data about my mother or me or anybody else. But, it would take the onus off of me now. I do not know how you solve the problem of, you know, an x-ray done in one provider's office should be the gold standard and you should not have to repeat that process in another provider's office, you know.

So, from that stand-point we have to make it easy for, and easy is not a good term when you're talking about reimbursement, but we have to make it easier for patients to look at a provider and say "you know, what I had that test done yesterday, here's where I had it done, by the way I have it on a thumb drive in my purse if you'd like to see it."

And that, you know, with the...I don't know how you automatically make that acceptable to a physician, you know, but there must be some barrier that we can break through, some alignment, you know, between providers that we can forge that makes that possible.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

I would...David McCallie would probably shoot at me for trying to answer that question, but I think if was signed it would be very good. I wouldn't slow it down though and I wouldn't put...I think there's other ways to authenticate the note other than the signature. So, if it adds...if it makes physicians less productive, I wouldn't do it either. So, it's a...I hope you all are debating these subjects and I think you are, so good luck. Be smart and do well.

Fionna Granger – First Assistant Secretary, eHealth Division - Australian Department of Health and Ageing

So, in the case of our system in Australia we have set up a digital signing system so you can see which healthcare provider any documents come from and the feedback from our clinicians is that's sufficient for them to be able to trust it and follow-up with that provider if need be.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Claudia, did you still have a question?

Claudia Williams – Director - Office of the National Coordinator

Well, I guess it's a follow-up to Alan's...Alan is in a business that I would think could benefit from having coded electronic data for his service lines and so in follow-up to the questions before, I was just interested in hearing from him how this would help in providing the services he's already providing for care management, picking treatments, coordinating with providers, etcetera?

Alan Blaustein - Founder CarePlanners

Yeah, I think the whole basis of what we're trying to accomplish is enhancing the coordination of care for the system as a whole. I mean, true coordination of care is the only way we're going to improve outcomes and decrease cost, you know, everything else around the table, getting the data out there and the whole thing.

So, the more data I can have in my system the smarter my service providers can be in managing our client base and just simple example, right now, and it's a little bit more manual that it should be, you know, we're creating somebody's authorized autobiography, their healthcare autobiography. I hate to use personal health record and some of the other jargon I'm trying to stay a little bit away from that.

But, we take that information and we make it available to the different doctors in the different physicians and we're able to flag the red flags in that information that don't match. We're not playing clinician in it, but we're greasing the wheels a little bit and when we speak to a doctor's office, they know that they have a nurse or a social worker, an insurance billing person on the other end of the phone with them. They know that they have somebody on the other end of the phone who understands the conversation.

But, and we've had this conversation before where we want to take this further is that same information being used as a decision-making support tool going forward such that people can not only deal with healthcare during the crisis but maybe avoid some possible avoidable crisis.

So, if I know that mom is on Coumadin and mom has a colonoscopy scheduled, a reminder e-mail should go out to mom and daughter or whoever the child is at the center there and say, you know, what you'd better be talking to the doctor about Coumadin before you go in for that colonoscopy and we have those matching algorithms. We've leveraged them from eHarmony and places of that nature and so action to me is just not getting the information and knowing what the information can do next, but helping use that information as a dynamic force to then move the system forward as a whole.

So, yeah, I think to Neal's point I'm thrilled with where this group around the table is at this point. I think it's a huge step forward and speaking for the entrepreneurial community, I mean, I know everybody everyday thanks the group here around the table, whether it be people like Castlight who are doing this from a healthcare expense stand-point or it's the folks at ZocDoc who have a slightly different model, I can name for you 20 different companies, Leslie, that are really at the cusp of some incredibly good things.

But, yes, that's how we would play, the more information we can have in our system the more we can provide coordination benefits and the more, frankly, that the system gets closer to being patient centric, which to me is the best way to create the best coordination of care and the most efficient system out there.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

We've just got to hope the United Healthcare doesn't buy those guys before they really create value. Value adds a little bit more flavor, seeing how Judy's flag is up.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Judy?

Judy Faulkner – Founder & Chief Executive Officer – EPIC Systems Corporation

There's been an interesting discussion a little bit earlier about if you have a healthcare organization with your record and you've shown up in another healthcare organization you want that record sent over. Do you feel that that first healthcare organization must send it over if the place you at is asking for it or do you feel that there is any reasonable reasons why they should deny sending it over?

Alan Blaustein - Founder CarePlanners

I've had trouble understanding any reason why somebody would deny my information from moving over. I do think that that's changing the nature of what's being put in the record though, right? And people are keeping two books, frankly, they're keeping their notes separate from the record to a degree. So they will send over the baseline information, but they certainly don't want their notes moving back and forth, that I have found to be the issue in terms of moving my own personal records and frankly for any of the different clients that we get calls from.

Neal Patterson – Chief Executive Officer & President – Cerner Corporation

I think the business models will impede the movement of information both at the provider level and at the information side. I think every individual should own, have an absolute title, I believe there ought to be legislation in this country that says, we own our own information, you cannot use your business model, your business strategies to impede that movement when I want it.

So, now I'm speaking from belief as a citizen, okay, of a country that has spent a lot of money on digitizing the content. I think there absolutely should be major data liquidity and it should be the individual's right to have it moved. So, but that's not the law of the land and I respect, you know, people in business and at risk and if that's their policy I hope it's exposed and I hope there's pressure on them to change that policy.

MaryAnne Sterling – CEO - Sterling Health IT Consulting

Having had...this happened to me a couple of weeks ago when I changed dentists, hard word to say, the first one refused to send my records and x-rays to my new dentist and they didn't give a reason, you know, they just wouldn't do it. And I was lucky that my new dentist familiar with such behavior was willing to work with me and actually ended up retaking x-rays of my teeth because she needed them, she needed to understand the history of my teeth. So, she actually took digital x-rays and didn't charge me for them because she needed them.

So, I guess we're going to have to do something, again, from a cultural perspective or maybe this one is as easy as saying "you will" when a patient or family caregiver asks "you will transfer those records and you will do it in a timely manner."

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Just, Deven, point of clarification, what would the Office of Civil Rights, what would you think the Office of Civil Rights would say about that?

David McCallie, Jr., MD – Vice President – Cerner Corporation

You got promoted.

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Well, so with dentists it's a little complicated because whether a dentist is covered by HIPAA or not depends on whether they're billing using the HIPAA standard transactions. So, HIPAA weirdly doesn't cover all healthcare providers just the ones who are billing using the codes. You can sort of blame congress for this and the origin of HIPAA, it wasn't meant to be a health data protection piece of legislation, it was meant to facilitate the use of digital payments and so we're sort of stuck with this statute that only apply to digital, you know, people who bill using these code sets digitally.

So, but, let's assume that MaryAnne's dentist, prior dentist, was covered by HIPAA then she would have an absolute right to get a copy of those records including the x-rays. Unfortunately, the parameter of time for getting that information can be quite long and wasn't much improved by the recent final rules, you can take...they can take up to 60 days to get it to you and the reason for those parameters being as long as they are is because of the, you know, there's sort of set of timing rules to apply to data that a covered entity holds regardless of whether it's in the EMR or it's in the designated record set in a storage bin in Montana and it's going to take them some time to get it in order to facilitate.

So, they sort of have this landscape of lots of different scenarios that they have to cover and so, at least in the final rule that we just got, there wasn't an improvement on the timing, but a strong encouragement to get people the data sooner than that, but it would have been her absolute right to ultimately get that data assuming that there is HIPAA coverage.

Judy Faulkner – Founder & Chief Executive Officer – EPIC Systems Corporation

But, Deven, what if her dentist, assuming her dentist falls under the same rules of the physicians, her dentist's EMR, with her approval, her dentist's EMR asks the other EMR for it, is there that same rule?

Deven McGraw, JD, MPH – Director – Center for Democracy & Technology

Well, so in terms of whether HIPAA requires disclosure in response to a provider's request it does not. It gives permission for providers to disclose information for treatment purposes, but it doesn't require such disclosure, in fact HIPAA mandates no release of information except to the patient upon her request and to the government when they are investigating you, beyond that everything is permissive.

Here's what you can do with data, but you would have the right absence a state law mandate to disclose and of course public health reporting under public health reporting statutes trumps that, but there's not...we don't have sort of a requirement when you get a request from the patient that says "send it to Doctor X" it's almost like the patient has to say "well, you know, this part of my access rights and I want you to directly transmit it" but then you're subject to the longer timeframes, because you're operating under the HIPAA access rules, which have those longer time parameters for them. And God I hope I got that right.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Leslie?

Leslie Kelly Hall – Senior Vice President – Healthwise

We've talked today a lot about transactions and care hand off and I think the next evolution is care collaboration where instead of saying how well am I passing you the football and one person deciding to take the football and go home, we actually have a new model that says that we are co-producers of health and collaborating in a common record. And I'd like to hear your comments about where you think the technology is going with that in a health data exchange as well in perhaps new and emerging entrepreneurial platforms that Neal mentioned earlier.

Alan Blaustein - Founder CarePlanners

Well, from my perspective, you know, the question really relates again to the more information that's out there, the businesses that can be built around it and allow for that collaboration and I would say, again, from the purview of the group around this table here...and I'm going to second, you know, what Neal said at the outset here and he said it much more stately than I did, this group is doing everything it can possibly do to get the information out there, but when you start talking about the collaboration I don't know from where within the system that collaboration can evolve.

I don't know which party should be responsible for that collaboration and by that I mean...and we keep talking about health information is really the clinical information, but you have your insurance information, you have your basic financial information relating to it, you have names, contacts, other information, your employer is not going to be responsible for it.

I think, again, along the lines of what CarePlanners is trying to do, you're going to see organizations like that where the patient who is not in the position where they should but they choose to take a more active role do so to facilitate their position as being patient centric and that to me is what ultimately forces the collaboration around the table.

But, it's hard for me to see, with all due respect, the existing insurance companies playing that role, a lot of the existing systems playing that role and God save the primary care physician who I don't know how much more can put on their plate and take money out of their hands and then ask them to spend 7 minutes with the patient and then hug them at the end, I mean, I just don't know what we expect there.

So, again, I think the collaborative model is one that the patient ultimately will have to get comfortable being part of and driving over a period of time and those are the opportunities that we're seeing in the marketplace and that's where the entrepreneurial marketplace is headed, and for anybody in this room to the extent that you don't get the benefit of seeing that marketplace, please, feel free to reach out to me I'll put you in touch with half a dozen or a dozen companies that are doing some really interesting things. I know Farzad and his team stay very much abreast of it, but there is a lot of interesting stuff out there and it's all, all working towards collaboration.

MaryAnne Sterling – CEO - Sterling Health IT Consulting

I would say though, Leslie, to that, that collaboration is based on those participating in the collaboration being agreeable to that, you know, none of my mother's providers have even thought about collaborating. So, until someone presents them with a new model and says "you will collaborate and here's how you're going to do it" they're just not concerned about that, that is not in their best interest at this point in time. So, it's not...they don't feel that's something that is my mom's best interest either, they don't care.

Alan Blaustein - Founder CarePlanners

You know, MaryAnne, and you're going to kill me for this over coffee later, and Leslie, this is where I say, I walk out of those provider offices. I mean, there is a responsibility here at the patient level that if you're not getting the care that you need go find the care that you need and that it is a consumer endeavor and it's not entitlement and MaryAnne, I'm sorry, you're just not going to find every physician in position, but I can give you story after story of doctor's offices that I left where I questioned whether or not they would work with another doctor who's in another system and they said "no" so, you know, when I come back to saying the concept of what should be expected from the consumer in this relationship, do what any consumer does in any other marketplace go shop elsewhere.

MaryAnne Sterling – CEO - Sterling Health IT Consulting

And, yes, I will kill you over coffee later for that, but I will also say that, that is easy for you and me maybe, for my 82-year-old mother when fewer and fewer, and fewer primary care doctors are taking Medicare patients, this gets really complicated, you know, every day I hear stories from other residents in her independent living community that they can't find a doctor who takes Medicare, so that's where it gets really rough.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Well, I want to thank the panel for a very engaging conversation, so thank you so much. And team, I think what I'll try to do is recount a little bit of what we heard and then get into what do you think we ought to do next.

I think we started out with the first panel with a bit of cheering for HIE is here, it can work and bring benefits, it's just not very widely distributed. I think Micky had a really good analogy and framing of HIE 1.0 going to 2.0, it started out saying it was very top-down, goal driven and said let's do it this way, everybody now and that turned out to be pretty complicated and we had to come up with complex policies and rules to accommodate all the different sizes and shapes.

So, as Micky described it 2.0 is much more of a bottoms up and needs driven heterogeneous approach and there are some benefits in that in the sense of some people locally will feel what it feels like to enjoy data liquidity and start moving towards the tipping point, but the heterogeneity starts creeping in and that causes it to be quite complex, but I think that what's here to stay.

We heard from North Texas that once you get enough critical mass of folks who understand and enjoy the benefits of HIE then you can move onto and that's the way we work here you either join this or not. We seem to be at a cusp of realizing the value of HIE. The more people that experience it the more then can proselytize and the more we understand how good it could be, but it's so hard to get there that it just takes time as people have talked about.

But, I think people are now depending on the pull from the new way of doing business from the ACO world of things, from much more patient engagement and patient ownership, that's a big pull that I think people are looking for that to cross the tipping point in line.

We heard about some of the impediments like interfacing not as...yeah there are standards that are missing not all labs are coded in LOINC. Lab results are a big problem period, but now some of the business models of getting connected are starting to interfere. So, the lab is caught, the sort of take it or leave it interfacing costs were mentioned multiple times and then John Halamka raised a new one where there might be a meter in between data flowing from one party to another which could be a real threat, you know, if it's going to be fee for transaction pricing.

Governance remains a challenge but also potentially an opportunity. If we get some of the principles right and establish models and give people a chance to not start over again that may be a real benefit. We did hear, multiple times about the UHI it is a barrier and it's potentially something that other countries have solved, but...you know, so we may have to rethink that.

And finally, we ended up with the real customer and the real beneficiary of all this work which are the persons who sometimes are patients to quote I think it was Neal and this is where the status quo, we can no longer be tolerating the status quo, which is so inadequate. So, the call for action was again Neal's call for data liquidity in way that can be consumed and understood by other systems so that we can coordinate and collaborate on the care for individuals.

So, that is sort of how Farzad started out and I think we got an earful for the entire day. I want to open it up to committee comments on what other contributions and the question has been asked what do you think we can do to accelerate the pace?

John Halamka, MD, MS – Chief Informatics Officer – Harvard Medical School/Beth Israel Deaconess Medical Center

Well, from a Standards Committee perspective we have, at our last meeting, outlined five general categories of work each of which five themes, about 25 things could work on over the next year or two. The key is translating that into a work plan. And so, Doug has dutifully promised to help us with that and making sure that we take everything we heard at this meeting, because I actually heard what were some of the barriers and issues and where there were missing standards, vocabulary or content, where there is clarification needed, where there are constraints needed on optionality.

So, Doug, I think as we prepare for the next meeting on February 20th there's a lot we can take from today and used to skinny down the list into a set of priorities for short-term work.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation
Wes?

Wes Rishel – Vice President & Distinguished Analyst – Gartner, Incorporated

I think starting with Micky's presentation this morning we I think...Micky started with the image of an orderly almost fractal view of health information exchange, well-regulated and said, well what's really working is exchange is a verb managing the clause way out somewhere as opposed to it all happening in a nice coordinated way. I think there's a lesson in there which is it has a lot to do with how that last...we've talked about how standards get you so far and implementation guides get you so far, and next year's implementation guide will get you a little bit closer. How do you get to that last bit?

Frankly, in other industries it has to do with 800 pound gorillas rather than 800 monkeys in a room and we...I think we have a tendency to want to shy away from that because it implies business dominance by the 800 pound gorilla. On the other hand, I think we need to be equally cognizant of not getting too far in the way of the 800 pound gorillas and in terms of translating that into action points going forward I think it is that we need to carefully...if there's one thing I've learned in working on the Standards Committee it's the difference between what you could do and what you can do, all right?

What you could do is what the technology, the standard whatever allows. What you can do is what you can rollout at scale and have work and so, so much of the time we spent a lot more time on the economics of issuing certificates than we did about the technology for issuing certificates because we just didn't know what was going to be the impact on the industry.

I think one of the areas that 800 pound gorillas do bring support is in being able to mount an effort that is accessible nationally in the kind of timeframe that we typically deal with between stages of Meaningful Use. So, I just think we need to be more alert to opportunities to take advantage of existing things that are out there or to...not to get in the way of what industry in the terms of not the new...brand new shiny entrepreneurs, but that all of industry is able to provide for healthcare.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation
Arien?

Arien Malec – Vice President – RelayHealth Clinical Solutions

Thank you, I took two things away, this has been a fabulous set of hearings. I took two things away. Number one is that business model and business interests at the end of the day are going to dominate. We can do all we want in standards and policy, but if we don't align the business interests in favor of health information exchange or in favor of patient engagement, we're just not going to get there.

And so, one of my takeaways would be really to continue the work in the federal sector as well as in the private sector to make sure that we're, you know, that the business model push has the momentum. We've sort of run out of running room on Meaningful Use in terms of a meaningful incentive. We need to make sure that there are other forms of incentives to do the right and appropriate thing.

And the second big take away is the enabling capabilities that create secondary markets and I don't know that we're there. I think part of story we're getting here is we're not yet there in the same sense that the financial industry is there or in the business to business industry or business to consumer industries are there where we have enough data liquidity and we have enough in the way of enabling stuff...

And so from a Standards Committee perspective I think we should be looking at what is that spare set of enabling constructs and enabling standards to, as Wes's point, that are "can" and not "could" that are foundational for data liquidity and also just to echo Wes, at that point maybe industry needs to step up and help solve this problem, in particular some of the long and intractable problems like identity, like consent, because I think we've seen some really good experiences that happen when maybe individual vendors step up and try to solve the problem, but I think we'd all agree we can't get there as individual vendors.

So, three big takeaways, number one is keep pushing on the business model, number two is keep pushing on sort of the four capabilities that everybody can do, and number three is maybe it's time that we, you know, that we do unleash the 800 pound gorillas as a force for good and then of course we're just going to need to make sure that we keep the constraints there to make sure that force for good isn't used the other way. Thanks.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

That's a very good summary. Other comments? Well, I think on one hand I think we're on the right track. This is a social change that's going on and there's a certain amount of time that's going to be required to get there. We seem to be well motivated, there are some pulling forces that are going to help us get there, but it sounded like people were encouraged that Stage 2 requirements are certainly on the right track and as an example reducing optionality is one of those things that's really helping. Farzad, did you want to make a comment?

Farzad Mostashari, MD, ScM – Health and Human Services – Office of the National Coordinator for Health Information Technology

Yeah, I was glad we started actually with the panel that spoke most clearly to the business case and I thought it was particularly noteworthy how different settings, different use cases required different technologies. And, you know, the point made by Hepp of HealthBridge basically that, you know, you've got to sell people what they want to buy and trying to, you know, create an HIE infrastructure noun that does everything and then asks people to pay for it doesn't work so well.

And, it was also interesting hearing from Camden Coalition that they were able to have a sustainable return on investment with a population of 70,000 because their costs are low, because they use ADT messages, simple just ADT messages to do some...to add value, to find a way to add value in that context with the existing business relationships in that community with fiercely competitive hospitals who yet want to reduce their readmissions and find their frequent flier as many of whom are uninsured and get them better care.

So, what was heartening to me was hearing in all sorts of different context whether you have, you know, in a community that has a lot of pay for performance or ACOs evolving, or readmission adjustments hitting them or Medicaid managed care evolving there are all sorts of different use cases, but in the whole trending towards care coordination, trending the arc of payment, trending towards value not volume and I can tell you for fact that that is going to be an imperative not just for the private sector, not just for states on Medicaid, but for the federal government as well.

And we are going to be looking to use those other policy levers to encourage interoperability and exchange, to make it more profitable to share than to hoard, that is I think...cannot be overlooked in terms of how important that is to getting exchange to happen, getting the last mile to close, Wes, that last gap to close and whether it's 800 pound gorillas or 800 gazelles, I think, Wes, is a more pleasing analogy than 800 monkeys in a room, I think we'll see, we'll see, there are different ways and we'll see which groups provide the most lubrication for this.

But, once the business drivers are there and once we have a framework for bringing people together for solving problems together, then I think we are in good shape. And, I do believe that on information exchange and interoperability it's been a long journey, we started the meeting reflecting back 25 years, but there has been acceleration in the past few years and I believe that we are, as some have said, on the verge, on the cusp of this...not just digitizing the information but being able to move it.

It reminds me a little bit of ePrescribing where for years there was so much work done to lay the groundwork and it seemed like those rates were pretty flat and then in the past three or four years it just, you know, shot up through a combination of technical issues, readiness issues, policy issues and mandates, and payment, but also the ecosystem coming together.

And I think, I hope, but I do believe that we are approaching that similar sense of coalescence of factors around interoperability and exchange. We'll see, it won't happen by itself, but I do believe we're on the right track.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Good, any other comments? Okay, we'll be open for...Walter, sorry?

Walter Suarez, MD, MPH – Director – Kaiser Permanente

Yeah, thank you, I've been mostly quiet today and it's been fascinating. I think most of the really big topics that I wanted to bring up were brought up with different questions. But, one thing I think that is important to bring up and it might not have been a fair question to people, but it's a concern that I see coming down the pike, probably later this year is what I would refer to maybe in a perhaps too strong word, but as a possible fiscal cliff for many HIEs in this country that are going to be facing the ending of the funding provided by ONC too many of them and for which I'm not sure there is a true successful sustainable plan in many cases.

And, so, again, I didn't want to really raise this question to the organizations that testified today, because I'm not sure that many of them or some of them were really funded really through this program, but I wanted to bring that up because I think it is a point of concern if we expect to really see HIEs and the health information exchange movement to continue.

Ultimately, the dependence on only Meaningful Use Stage 2 to help support and help push really data out of an organization is probably not going to be enough. So, it is something that I presume that many states and funded jurisdictions are facing today and it's going to be a very significant challenge coming later this year for many of them.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

Okay, why don't we open up for public comment, please?

Public Comment

MacKenzie Robertson – Office of the National Coordinator

Sure, operator, can you please open the lines for public comment and if there are any public comments in the room if you could please come forward to the table.

Alan Merritt – Altarum Institute

And if you'd like to make a public comment and you're listening via your computer speakers please dial 1-877-705-2976 and press *1 or if you're listening via your telephone you may press *1 at this time to be entered into the queue.

MacKenzie Robertson – Office of the National Coordinator

And there are no public comments in the room are there any public comments on the line?

Alan Merritt – Altarum Institute

Yes, we do have one comment.

MacKenzie Robertson – Office of the National Coordinator

Thanks.

Bettina Experton, MD, MPH – President & CEO - Humetrix

Hello?

MacKenzie Robertson – Office of the National Coordinator

Hi, we can...go ahead?

Bettina Experton, MD, MPH – President & CEO - Humetrix

Yeah, Dr. Bettina, expert on and Founder and CEO of Humetrix, I want to thank you for a tremendous discussion on the subject of health information exchange, it certainly is an exciting time where we are going to see this in place. As to the question of how we can accelerate the pace of health information exchange I think one of the 800 pound gorilla category where we are meeting of the world of mobile technologies or Apples of the world or the telecom industry, we can capitalize on that type of technology to solve many of the issues you debated today of usability, mobility, content and the patient control.

And I don't think MaryAnne should wait to see her various mother's providers change behavior to be able indeed to care for her mother and the same for Alan, as a former oncologist I'm appalled by behavior of his cancer center and that transmitting data to the other cancer center, but that's the reality we live with today.

So, I think we need to capitalize for instance on truly consumer mediated exchange, I mean, that's a phrase which the ONC, in a very smart way, has defined. And, I would like to make some suggestion on making that type of exchange really operational both at scale today with the use of mobile technology.

I understand that Meaningful Use is about regulating the EMR industry and when we talked about view, download, transmit the transmit is a point to point, provider to provider type exchange, and reading for instance that the Meaningful Use Stage 3 addressed in that the patient is still very much a recipient and not really a true actor in that transmission.

If I read in the menu items to engage patients and families in their care and building on the efforts of Blue Button and Blue Button Plus in which my company Humetrix is very involved, the patient should have more than just the right and the opportunity to designate a recipient of his record, but who has the means to directly transmit that record he will view and download from an EMR, from a payer system directly to the provider he is seeing at that time.

As you know most encounters do not result from referrals, so a provider may not be in the position on transferring that, transmitting that record to a designated referred physician. Also, many of the specialty encounters are new patients, they are not established patients.

Given Medicare beneficiary who has 7 different providers he sees in a given year, two primary care providers, 5 specialties, can we wait? Can MaryAnne wait, that those 7 different providers, you know, behave in the best way and transmit records from point to point, no, I think MaryAnne and, you know, 48 million others, Medicare beneficiaries and their family caregivers need to be able to rely on existing tools, such as mobile technology which allows them to view, download, you know, CCD from an EMR or a Blue Button record for instance into a mobile device which can transform that record into an actionable record and has the means to transmit themselves in an electronic way a structured document into another provider's EMR.

So, you know, there is technology existing today, mobile technology is one category which is in the direct hand of the consumers and also in providers and those should not be forgotten when defining Meaningful Use, when looking at health information exchange, that was my comment. Thank you.

MacKenzie Robertson – Office of the National Coordinator

Thank you very much, are there any more public comments on the line?

Alan Merritt – Altarum Institute

We have a comment from Adrian Gropper.

MacKenzie Robertson – Office of the National Coordinator

That was the comment that just happened?

Alan Merritt – Altarum Institute

That's it.

MacKenzie Robertson – Office of the National Coordinator

That's it, okay? Hello?

Adrian Gropper, MD – HealthURL Consulting

This is Adrian, can I say something?

MacKenzie Robertson – Office of the National Coordinator

Yes, go ahead.

Adrian Gropper, MD – HealthURL Consulting

Patient privacy rights is a national not for profit organization advocating for the protection of patients and the privacy of the physician/patient relationship, effective guidance around the implementation of Stage 2 EHR will have an immediate effect in solving current problems faced by health information exchanges around patient ID, authorization, management and record locator services. Our approach or suggested approach is based on extending the physician's ability to prescribe drugs, labs and referrals to the prescription of health information access and exchange without undue influence interference from the EHR vendor or the institution.

In particular we point we point to section 423 of the applicability statement for secure health transport, that's Direct, that reads, FDAs may store self signed certificates in the collection of trusted anchors, but is not required to do so and may be prohibited by policy from doing so. PPR contends that by interpreting this clause as allowing patients to use their voluntary Direct e-mail address as a cross institutional patient ID that is transparent and accessible to the patient in ways that probabilistic MPIs are not can solve one of the major issues that was raised today.

PPR also contends that interpreting this clause will promote practice innovation, patient engagement, information flow and privacy, this interpretation strengthens the physician/patient relationship, reduces EHR vendor lock in and opens Health IT to innovative services accessible conveniently at the discretion of individual professionals. Please ensure that the decision to use self-signed Direct certificates is in the hands of patients and their physicians. Thank you.

MacKenzie Robertson – Office of the National Coordinator

Thank you; are there any more public comments on the line?

Alan Merritt – Altarum Institute

We have no comments at this time.

MacKenzie Robertson – Office of the National Coordinator

And seeing no more public comments in the room, I think, Paul, if you wanted to make just one last remark?

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

No, as a last remark is to adjourn.

MacKenzie Robertson – Office of the National Coordinator

Adjourn.

Paul Tang, MD, MS – Internist, VP & CMIO – Palo Alto Medical Foundation

What a long day and thank you all and thanks for ONC staff who put together this hearing, thank you.