

**HIT Standards Committee
HIT Policy Committee
Implementation and Usability Hearing
Transcript
July 23, 2013**

Attendance

The following members were in attendance:

Implementation Workgroup

- Elizabeth Johnson
- Christopher Ross
- Anne Castro
- David Kates
- Wes Rishel
- John Travis

Meaningful Use Workgroup

- Paul Tang
- George Hripcsak
- Paul Egerman
- J. Marc Overhage
- Michael Zaroukian
- Amy Zimmerman
- Greg Pace
- Christine Bechtel
- Leslie Kelly Hall
- Tim Cromwell

Certification/Adoption Workgroup

- Marc Probst
- Larry Wolf
- Joan Ash
- Paul Egerman
- Joseph Heyman
- George Hripcsak
- Paul Tang
- Elizabeth Johnson
- Joseph Heyman
- Carl Dvorak

The following members were absent:

Implementation Workgroup

- John Derr
- Timothy Gutshall
- Tim Morris
- Stephen Palmer
- Sudha Puvvadi
- Kenneth Tarkoff
- Micky Tripathi
- Gary Wietecha
- Robert Anthony
- Kevin Brady
- Tim Cromwell
- Nancy Orvis

Meaningful Use Workgroup

- David Bates
- Neil Calman
- Arthur Davidson
- Marty Fattig
- David Lansky
- Deven McGraw
- Latanya Sweeney
- Charlene Underwood
- Joe Francis
- Martin Rice
- Robert Tagalicod

Certification/Adoption Workgroup

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- Charles Kennedy
- Donald Rucker
- Latanya Sweeney
- Micky Tripathi
- Martin Rice

Presentation

Michelle Consolazio – Office of the National Coordinator

Good morning everyone, this is Michelle Consolazio with the Office of National Coordinator. This is the Implementation and Usability Hearing that is sponsored by the Health IT Standards Committee's Implementation Workgroup, the Health IT Policy Committee's Meaningful Use Workgroup and the Health IT Policy Committee's Certification and Adoption Workgroup. This is a public hearing and there will be time for public comment on the agenda. To those that are on the phone the meeting is being transcribed so please announce yourself when you are speaking. Instead of a formal roll call today we're just going to go around and have everyone introduce themselves. So, we'll start on this side and go around.

Joan Ash, PhD, MLS, MS, MBA – Professor & Vice Chair, Department of Medical Informatics & Clinical Epidemiology, School of Medicine – Oregon Health & Science University

Good morning; I'm Joan Ash from the Adoption and Certification Workgroup.

Greg Pace – Deputy CIO – Social Security Administration

Good morning everyone my name is Greg Pace on the Meaningful Use Workgroup.

Lana Lowry, PhD – Project Lead, Usability and Human Factors for Health Information Technology – National Institute of Standards & Technology

Good morning everyone, Lana Lowry, NIST.

Michael H. Zaroukian, MD, PhD, FACP, FHIMSS – Vice President & Chief Medical Officer – Sparrow Health System

Good morning, Mike Zaroukian, Meaningful Use Workgroup.

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

Amy Zimmerman, Meaningful Use Workgroup.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Marc Overhage filling in for Charlene Underwood.

Joe Heyman, MD – Whittier IPA

Joe Heyman from the Adoption and Certification Workgroup and the Implementation Workgroup.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

George Hripcsak from the Meaningful Use Workgroup.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Cris Ross from the Implementation Workgroup.

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

Paul Tang, Meaningful Use Workgroup.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Liz Johnson, Implementation Workgroup.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Larry Wolf, Certification and Adoption Workgroup.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Marc Probst, Certification and Adoption Workgroup.

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

Anne Castro, Implementation Workgroup.

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

Wes Rishel, Implementation Workgroup.

John Travis, FHFMA, CPA – Senior Director & Solution Strategist, Regulatory Compliance – Cerner Corporation

John Travis, Implementation Workgroup.

David Kates – Senior Vice President, Clinical Strategy – NaviNet

Dave Kates, Implementation Workgroup.

Jodi Daniel, JD, MPH – Director, Office of Policy and Planning – Office of the National Coordinator

Jodi Daniel, ONC.

Joseph Bormel, MD, MPH – Medical Officer, Director of Health Outcomes – Office of the National Coordinator

Joe Bormel, ONC.

Jacob Reider, MD – Chief Medical Officer – Office of the National Coordinator

Jacob Reider, ONC.

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

Judy Murphy, ONC.

Scott Purnell-Saunders – Office of the National Coordinator

Scott Purnell-Saunders, ONC.

MacKenzie Robertson – Office of the National Coordinator

MacKenzie Robertson, ONC.

Michelle Consolazio – Office of the National Coordinator

And are there any members on the phone.

Kevin Brady – Group Leader, ITL Interoperability Group – National Institute of Standards and Technology

Kevin Brady from NIST.

Paul Egerman – Businessman/Software Entrepreneur

This is Paul Egerman from one of the Workgroups.

Michelle Consolazio – Office of the National Coordinator

Are there any other workgroup members on the phone? Okay, thank you, and with that I'll turn it over to Paul Tang and Liz Johnson.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Good morning, thank you all for being here this morning. This is a momentous occasion for us, we've been working for this now over four years, as we all know it, as we get into that fifth year we really have reached an opportunity on this journey to talk about how are we doing with Meaningful Use Stage 2, how can that inform Meaningful Use Stage 3, some other really fascinating, at least for me, this tells you I have no life, topics include interoperability, HIEs and usability.

So, we know as we put this agenda together that we have touched on the work that all of us are doing daily and that as we focus we need to focus on innovation and the way we're meeting the things that we want to do and we go ultimately back to our goal which is to improve patient care and to see a change in outcomes.

If you look at the statistics that the ONC puts out you'll see clearly that we have made a significant impact into the numbers of EMRs and EHRs that now are across our nation, it's no longer the minority it's now the majority of our providers that use that as part of their toolkit to provide care.

So, now our job is to really take that data that's being collected and do things that make a difference in the lives of our patients. So, today you have an opportunity, we have, you know, a remarkable set of panels that will talk to us about their experiences, share with us how they've gotten to where they are and where they want to go in the future.

It gives us an opportunity to interact with them and really inform our recommendations for the future. So, I thank all of you for participating and for sharing your wisdom and we'll take that wisdom and we'll have Paul turn it into the best recommendations for Stage 3 you ever saw. How about that Paul?

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

Well, the Workgroup I had the privilege of working with will do that for recommendations at any rate. I want to open up by mentioning a couple of people, but one, I want to thank the staff. ONC is just an incredible organization, I mean, it's one of the top both performing but also the amount of work that's being done by ONC is just absolutely astounding.

So, MacKenzie, you may have heard is retiring from her role in overseeing the FACA Committees, the people on both the HIT Policy Committee and the tens of workgroups that we have known how much goes on every day, virtually every day and MacKenzie has two of these committees, they're both very, very active and she keeps us really going and on the ball and doing well and being effective, that's just – I've just not seen people like her and so we really owe big debt of gratitude to her. For, example, this hearing, so yeah a bunch of folks get on a call and they throw out people's names and then she makes it happen in two weeks. So, there is just not – I can't overstate how much MacKenzie has played an important role in the success just having it happen but also the success of this committee and thank you very much.

[Applause]

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

So, it's always a challenge to fill shoes with someone like MacKenzie, fortunately Michelle Consolazio we've – George and I have had the privilege of working with her over the past more than a year on the Meaningful Use Workgroup and we know just what an astounding person she is. So, she has agreed, I don't know how, but she has agreed to both do her current job and now step into MacKenzie's role and you heard her debut just a few minutes ago. So, we're just delighted to have Michelle step in and help us out.

[Applause]

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

So, as Liz was saying this really is an important hearing. I'll just sort of echo some of the things she said. We've really seen a tremendous progress in the adoption of HIT and we're going to talk about its use. But, you know, we talk about 0-60 it really has been 0-60, before HITECH long in the dark ages of 2009, we basically had zero – Meaningful Use Stage 1 and now almost 60 percent of practitioners have already attested to Meaningful Use and 80 percent of hospitals the same thing. That's unheard of, it would not – I'm positive wouldn't have happened with HITECH and it wouldn't have happened with all of the good work not only the volunteer folks on this committee and all its workgroups and the Standards Committee and its Workgroups, but ONC. I mean it just goes back to how hard-working this organization is and so I really want to tip my hat to that.

Now, we've also had use of some of the functions that we've asked vendors to provide and that's sort of Stage 1 and getting into Stage 2 and as Liz mentioned we're now at Stage 3 and according to that famous arrow we're supposed to be talking about meaningful outcome not just use of the functions and use of the systems and that's what we're going to talk about today or we're going to talk about three topics that have been challenges for all of us, that's the implementation it's not part of any criteria, but it's front and center in terms of how all of us as providers have to get this up and running before we can actually use it or make Meaningful Use of it.

Usability is another topic; certainly it's something that we all strive for and with a complex systems it's hard to get there and interoperability and information exchange. So, these are the big gnarly issues that have always been there. They still are there but we're getting over that activation barrier and one of the things we hope to come out of this hearing, we'll certainly hear the challenges because there are many and we know that, we've known them even before Meaningful Use of course, but we want to get the benefit of your successes and how can you help all the other participants? How do we increase the success rate, the probability of success for all of the participants not only in this program but for all providers in helping use this as a tool to deliver the core mission of patient care?

So, in addition to the many excellent questions that are in for each of the panels some overarching questions are how well are the EHR and HIT products that are certified assisting you in achieving meaningful outcomes. And another question then is sort of the action oriented things, the advice that you can give us so that we can provide advice to HHS is what additional steps can we take, what policies, practices, training, outreach, what can we potentially consider for recommendations to HHS to step up the probability of success of achieving meaningful outcomes using these systems.

So, we're intently listening. We still have a chance to incorporate these in our recommendations to HHS. So, we'll be presenting those. So the Meaningful Use Workgroup will be presenting its draft Stage 3 recommendations at the Policy Committee in a couple of weeks from now and then finalize those in the September Policy Meeting. So, it's very soon but these are things that are very, very important. So, thank you so much everyone for participating and thanks Liz for organizing this and thanks to the ONC staff for making it happen. I'll turn this over to Cris and Marc.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Great, thank you, I think we're going to focus here on some comments just around objectives and outcomes for this meeting. From the Implementation Workgroup perspective we held hearings similar to these at about this same point in the cycle as we moved from Stage 1 to Stage 2 and we learned a lot about what the practical implications were for those eligible providers and hospitals as they were implementing Stage 1 and how that might influence approach to Stage 2. So, here we stand on the cusp of Stage 2 with organizations preparing for certification and vendors preparing for certification as well and Meaningful Use 3 just, you know, 45 days down the road.

At least from an Implementation Workgroup stand-point, you know, the purpose of that group on the Standards Committee it's really responsible for practical application of aspirational vision. So, whereas the Meaningful Use criteria maybe aspirational the real question is how does the industry get there?

So, for today as we receive information from the community of providers, hospitals and vendors I think many of us on this group are primarily interested in thinking about our role as a Federal Advisory Committee to ONC and what we are looking for in terms of objectives and outcomes is to provide information that we can synthesize into usable feedback and advice to ONC in our Federal Advisory Committee role for the purposes of developing regulations, for program development and for support of the advancement of the industry.

So, some of these topics for example usability are very broad and we want to hear a broad view of the landscape. At the end of the day we're trying to distill that down into some actionable recommendations that we can take to ONC so that the industry can advance. So, we're looking forward to great dialogue today. I think that's all that I wanted to say from an implementation stand-point, Liz unless you want to augment it?

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

No not at all, thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Otherwise, I'll turn it over to Marc Probst.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Yeah. Marc?

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, thank you and thanks everybody for being here and helping in this process, it has come together quickly. We are the Certification and Adoption Workgroup and I can't think of much that would have more impact than good usability to encourage adoption of these electronic medical record systems. I work for an organization where we develop our own EMRs, so we're a dying breed kind of like dinosaurs, but I understand the challenges associated with – through the development cycle in developing in the concepts of usability.

I remember early on usability were those little rubber tips you put on your thumb and your finger so that you could separate the cards and put them into the computer and then usability turned into light pens and proprietary hardware that you could touch the screen and actually move through menus and it's advanced a lot, now we have the mouse, we have voice that can be used to assist in navigating our systems and really advanced workflow engines, and some of these are relatively new technologies. So, it's going to be good to hear today from some of the people that are really leading these practices and we have some, I think some excellent panels.

As I look at usability and as we think about it, it generally boils down – I mean, there's all the things that can be done, menus are an interesting thing because, again we've been developing systems for about 35 years, and, you know, just going in and modifying one menu item on a system that people have been using for many years can create total havoc in the workflow processes and the things that the clinicians are doing. So again it's a process that we have to be careful and thoughtful about and I think we can learn from one another and we can get some good requirements.

Two other things about usability that always comes up are performance and reliability. If we make changes to these systems that make them go slower it doesn't matter how sexy it looks it's not going to be acceptable. So, there are a lot of things that we can focus on.

So, I'm looking forward to this as a Workgroup. We will also be giving some feedback and reports to ONC, hopefully to help in the adoption processes. So, rather than repeat a lot of what's been said, I think we can probably move into our first panel and I was asked to go ahead and introduce that panel. So, are Dr. Ratwani and Dr. Fairbanks here?

If we could get them to go ahead and set up and while they're setting up ONC has contracted with the National Center for Human Factors in Healthcare to really do some good focused effort at working with the vendors and looking at the usability aspects of these systems and Dr. Ratwani and Dr. Fairbanks have been leading that effort and I've had the pleasure to be on numerous phone calls where they've presented some of their feedback. So, they'll present.

We have about 20 minutes, give or take and we are starting a little early. So, hopefully at the end if you are okay we would love to have some time to ask some questions of you as well based on the presentation that you give us. So, welcome and thank you for being here.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

Thank you, my name is Terry Fairbanks I'm going to start out and then I'll introduce my colleague, Raj Ratwani, we'll each do about ten minutes and then we'll have ten minutes of discussion. I just want to briefly say my background and Raj will talk more about his background so that you know where my perspective comes from.

I'm a Human Factors Engineer and then after working in the safety world as a Human Factors Engineer I had a career change and went into medicine and became an emergency physician and for the last 15 years I've been combining those fields to do work in human factors in healthcare. A lot of that has been Health IT and also medical device work as well. And we have disclosures, no conflict to report.

And so I'll tell you a little bit about the context where we come, as you saw from the icon on the first slide, we are a National Center for Human Factors in Healthcare in this capacity as a subcontractor in the SHARPC Program and we're working with Jiajie Zhang's group as a subcontractor to inform ONC about the usability, processes and user center design processes and challenges that are met by the vendor community and Raj will tell you more about our methods and how we've gone about that.

I want you to know the context that we live in and where we come from, we are the National Center for Human Factors in Healthcare is part of MedStar Health, which is a 10-hospital system here in Washington DC and Baltimore and we are part of the MedStar Institute for innovation. We do about half of our work in funded research and grant and consultation work applying human factors techniques to healthcare, a lot of which is in Health IT.

For those of you not completely familiar with human factors, I thought it was worth taking two minutes to describe what human factors and human factors engineering is. Sometimes it's thought to be how to design and train and change the person, but it's actually the opposite. It's the study, the scientific study of human performance, human capabilities and with that data we try to then inform the design of systems, devices and Health IT systems. So, it's not about redesigning humans, it's about redesigning the system within which humans work to optimize the relationship between technology and the human user.

Human factors really was born in the aviation industry in the '40s, very, very common as many of you know in the military, nuclear and aviation safety industries and becoming increasingly important in healthcare both in efficiency and in safety realms.

So, bringing that specifically to the point of today's hearing I want to talk a little bit about health IT usability and we had some good introduction to that already and I want to talk to you about the way we look at usability. We look at it really in two bins.

The bin on the left, as you see on this slide, is the basic user interface design, which I think is the way that most people think of usability when they think about health IT, they think of the clicks, the menus as mentioned earlier, the navigation, how the screen looks, the colors and the way that the person interacts with the screen and that's very important and I think in health IT, it has a lot of impact on the acceptance that we see from our providers and our end-users, and also and very importantly, a lot of impact on the safety and this is where a lot of errors can come from. So it's the displays and the controls, the screen design, the clicks and the drags, the basic interface design.

The second bin I think is equally important and I really want to emphasize because I think this is the bin that sometimes we don't pay enough attention to and that's the cognitive task support side of usability. In the health IT industry it tends often to be called workflow design. So, when you talk about – when health IT experts talk about workflow often they're talking about this bin. It also has other areas like the functionality, what the system actually does for the end-user and data visualization, how they look at the data and how that helps them interpret the data in the most meaningful way. This all has to do with cognitive task support and because I think this is so important to understand as we talk about our study of the vendor's user centered design processes I just want to take one minute to give you an example to demonstrate what I'm talking about in this second bin.

This is a famous photograph taken from a physician human factors colleague of mine, Bob Wears, in an emergency department about one year after they implemented a health IT system which you see on the right and the projector is a little dark so I don't know if everyone can see, but on the left you see all of the physicians, nurses, attending, residents gathered around the whiteboard which had been left up a year before when they implemented the health IT system and maybe in public articles we all read about this, this may be called physician resistance and maybe there's a thought that maybe the physicians just aren't good aren't good at computers, etcetera, but you can look at this there are young people obviously very computer savvy.

So the question is: Why are they still using the whiteboard when this health IT has been implemented for a year and this particular system I happen to know is actually very good at the Bin 1 part? It has good usability in terms of the interface design and the way it's used. So, it's not the ease of use that's keeping them from using it, it's the way it actually supports their cognitive work and the work that they're doing.

This is a close-up of a whiteboard that was used very commonly in essentially every emergency department and operating room in the US and Canada, and Europe before implementation of health IT and if you think about these whiteboards these were developed by the end-users overtime to support their needs. Cognitive engineers would call this a cognitive artifact of work, it helps support their work, track their work and helps them remain on task and communicate among each other synchronously and asynchronously about the work that they're trying to do.

And I'll point out a couple of things here. The red dots you see along the left column there are the ways that the technicians that are responsible for stocking the rooms communicated with one another about which rooms they had stocked in that shift and after this particular ED, which we studied a transition in, implemented health IT, because that function to support that work task was not built into the Health IT system the rooms weren't stocked readily for a few weeks until they transitioned to a work around strategy in order to do it without the support of the whiteboard that they had before.

And the safety related issue is the column that I just covered up here but where the physician's note who is responsible for what patients and they have these X's with slashes and O's and what had been developed over time, and if you look at studies there is essentially every ED in the country has some symbol to represent this, the physicians did one circle to say they were responsible for the patient, so "blue" meant "X physician," another color meant another physician. Then when they saw the patient they put a slash through it and then when they finished their paperwork they put a second slash.

And in this particular ED that we studied the implementation of the health IT did not have a way to support this really important cognitive workflow to support that physician task. What happened is the physician started writing this on an index card which they put in their pocket as a work around because they didn't have a way to do it on the screen, which at first seemed like it worked really well, but what no one realized is this had become a communication strategy among providers. So, it was the way that the emergency nurses figured out that a patient had been seen by the doctor and was ready to go and this was a teaching hospital so what happened from a safety stand-point is residents and nurses started discharging patients before the faculty attending physician had seen them because they lost their situation awareness.

So, I use this example to demonstrate this has nothing to do with the clicks, the menus and the drags, but it's the second aspect of usability which is critically important and that is the support of the cognitive work of our frontline providers and I would submit that when you really look at "resistance" that we're finding and displeasure with the Health IT systems when that happened it's often this bin of usability that is not being supported as well as it should be in the future more often than it is the clicks and drags, and menu usability issues that we often talk about.

So, I'm going to transition to Raj and I'll tell you now that I've given kind of a general introduction of our perspective here I'm going to just tell you the goal of our work that we've done through SHARPC and that has been to go to the vendors of all sorts meet with them and get a better understanding of their current user center design processes and the challenges that they're encountering in order to do the kind of work we're talking about and I think you can have a sense, I just showed you one emergency department and if you think of all the permutations and combinations of cognitive work that needs to be supported in healthcare you can imagine what a gigantic challenge that we're talking about that this is.

The team that has worked is listed there, Raj Ratwani is a human factors specialist who came to us last year from the DoD world where he worked in the Navy research world, working on IT for the military and so we stole him to try to get some of his knowledge and bring it into healthcare. So, with that I'm going to transition and let Raj tell you what we learned from this study of the vendors.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

Thank you, Terry. So, as Terry mentioned our primary objective was to learn about vendor UCD processes and to understand the different kinds of challenges that vendors face as they attempt to practice UCD. So, to start we considered UCD to be any formalized process for incorporating user needs throughout design, development and importantly through usage as well.

So, vendors did not necessarily have to prescribe to ISO or other set standards they could have their own developed UCD process in place. And to me this object, we traveled to nine different vendors, and generally spent about a full day talking with usability experts, business analysts and product managers, none of the vendors were compensated for participating in our research. Each visit included at least two members from our team; I went on every visit and then was accompanied by either Dr. Fairbanks or Dr. Hettinger to ensure that we had a clinician perspective there as well.

So, to give you rough idea of the vendors that we visited, of course the vendor community is quite diverse so we attempted to get a good representation of the vendor community, although that can be quite difficult with only nine visits. On this table you'll see the estimated revenue of each of the vendors we visited ranging from approximately 300,000 to over 1 billion, you'll see the rough number of employees at each vendor which ranges from roughly 10-to 5,000-plus and we also attempted to quantify the number of usability staff that each vendor may have. Now these are dedicated usability staff. So, this ranged from zero to 30+, of course some vendors may have usability expertise that resides with a business analyst or a software developer and in that case it's not clearly represented here.

So, after we spent the day talking with the individuals I described we can generally categorize the vendors into three distinct categories. The first categories are vendors that really have no true UCD process in place and actually they have a misconception of what user centered design actually is. They primarily believe that responding to user feature requests constitutes user centered design and they actually have pretty elaborate ways of gathering this feedback, so they have web portals or platforms designed where users can submit future requests and other users can then vote as to whether that's a good request or not and that's the process that's driving future design of that particular EHR. So, this group has no formalized method for incorporating and testing user needs throughout design, development and usage.

The second groups are those that have basic user centered design processes in place. This group understands the importance of user centered design and is striving to implement those processes now but is facing a few particular challenges which I'll describe on the next slide. These vendors maybe at different stages of incorporating UCD, it could be new to their development process or they may have tried other UCD processes unsuccessfully and are going through an adjustment phase to introduce new UCD processes to achieve particular goals. So, for this group UCD is not fully integrated quite yet.

The third groups are vendors that have very well developed user centered design processes in place. They have actually a pretty rigorous process, they've developed very efficient testing methods to accomplish their goals this can include things like remote user testing, they have extensive user networks where they can get both novice users and expert users for both formal and informal testing, and overall a generally extensive infrastructure. They often times have a separation between usability researchers and designers to ensure that the research aspect and quantifying the outcomes is different from the actual design element and they also have processes in place to track usage data and focus on post-implementation aspects that then drive further development and enhancements to the system.

I'm going to talk about a few of the challenges that each of the vendors have faced. These were either explicitly expressed by the vendors or we were able to deduce particular challenges based on the information that we gathered.

For the group that had no true UCD in place one of the big challenges here was that they lacked exposure to the context in which clinicians are operating and this makes it very difficult to tackle some of the issues Terry discussed in that Bin 2. So, if you talk to them about, for example, patient identification errors they're unable to really understand what patient identification errors are and why they occur. To this group of individuals they will say things like "well, if I build a system where you click on the patient you'll get the patient record, if you don't click on the patient you won't." So, there is a lack of understanding of the actual environment in which clinicians are operating.

This group has also expressed a desire to see other EHR systems to understand good usability and at times aspects of bad usability. In most other domains it's easy to access different kinds of products to understand the usability of those products. In the EHR world it's extremely difficult to get exposure to different vendor's products.

There are also issues with general UCD process for this group. So, for example they have questions about the number of participants that should be run in formal testing, the expertise of these participants, how those particular processes should be understood, how many participants should be run, etcetera.

Ultimately this group also faces the major challenge of a lack of support from management which prevents a lot of integration of UCD, it's obviously extremely difficult to integrate UCD processes if the management is not on board to facilitate that.

Turning to the basic UCD group, the basic UCD vendors generally had very specific challenges that I think can be addressed. Some of those challenges would be things like access to participants, most of these are resource driven, access to participants for both formal and informal testing. So, they have challenges continually getting new novice participants when they need them or also even existing users of their product. They have challenges with use case development and generating data that they may actually use to test their systems, so very pointed issues with this group.

For the group that has well-developed UCD in place, there were two primary challenges. The first was they had resource limitations in developing a lot of the detailed workflow analyses in that bin too, particularly for subspecialties. They simply didn't have the resources to do that.

And the second is access to safety data. So this group here, particularly in ambulatory settings is looking for serious safety events or other adverse events that can help shape and enhance the usability of their system but they simply don't have access to those data. And I should say that looking back at the nine vendors, approximately one-third of the vendors fall into each of these categories to give you a rough idea about where the vendors fall.

There were also a few general challenges that were expressed. The first is the issue of the timelines in which development is occurring. The timelines are quite rapid and quite rigorous and it can be difficult to incorporate UCD into that process. All of the vendors expressed the support for the intent of safety enhanced design, but had particular difficulties with the summative testing element. In particular often times they developed their system, summative testing is conducted at the end of development and any of those issues that arise during summative testing there's simply not time to make those enhancements or modifications to the product and so the product often times goes out the door and any enhancements that need to be made are made on the next iteration of it.

And the last challenge I'll describe here for this particular slide is the issue of legacy systems. So, despite the fact that several vendors may now have rigorous UCD processes in place, it's very difficult to apply those to processes to legacy EHR systems and so we're not going to see improvements, we may not see improvements in those systems because of the resource limitations and the cost of making those kinds of changes.

They may be able to achieve some of the Bin 1 interface-type modifications to color, although even that can be extremely difficult and time intensive. So, looking forward the vendor UCD processes certainly I think will better support the clinician role and also there is the opportunity to begin to understand how the patient will consume this information and how usability can support the patient role as well.

There are two other challenges I want to discuss although these are not squarely in the realm of UCD and this is more of a sociotechnical approach, but I think they are worth pointing out. The first is the customization aspect of the certified EHR products.

So, often times the doctors will make several feature requests to the vendor and the vendors will comply with these requests in an effort to satisfy the customer, but the doctor generally does not understand the implementations of those feature requests and the implications of those feature requests on usability and workflow.

The vendor is often times in a difficult situation where again they want to comply with those requests. The vendors are often times reluctant to provide their own guidance that they may have built from expertise of working with other doctors and so there is a difficult position here. Ultimately, the customized product is often drastically different from what was certified leading to the question of what's actually being certified.

And the last piece I'll touch upon is with training. So, the type of training, the amount of training and end-user engagement of training is critical to ensure successful products and although training cannot make up for usability shortcomings it's very important to have effective training in this realm. Often times the training that is offered to a doctor is offered at additional cost to the product and often times smaller providers in particular may not be willing or able to pay for that extra training and so training that generally should be most effectively done in person is by web-based or by simply manuals and that's not leading to effective training of the product and ultimately, at times in unsuccessful usage of the product.

So, I'm going to stop there and please ask questions. There is a lot of information that of course we were not able to present because of time constraints and so please ask questions.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Well, thank you, that was excellent and really appreciated, that presentation and the work that you're doing and if there are Workgroup questions go ahead and put up your tent. I'll ask you one while they're putting theirs up and it goes to the kind of customization and training slide.

How much of the user centered design or the, UCD, how much should that be moved actually to the end-user? Because it's so broad in healthcare, we have different specialties using it; we have lots of different areas using for instance an electronic medical record. I mean are there best practices for how much of that should actually be given to the users to modify or customize the systems themselves and are we seeing any trend toward that?

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

Well, I think, in the healthcare setting its very unique to have a lot of the usability aspects driven by – sorry in most other environments it's very unique to have the end-user driving some of the usability components and traditionally those kinds of choices are not given to the end-user. So, I think that is a bit of a challenge.

I think overall it's difficult to quantify how much should be provided to the end-user. I think looking at the system as a shared responsibility perspective is going to be important moving forward and having the end-users understand that the choices that they are making during implementation are going to drive ultimately usability and perhaps better engagement with the vendor can better drive that process.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

I'll add that one problem in human factors user centered design in systems in general is that the end-user doesn't always have as expert an insight as you might think into what their needs are and that's one problem – that's the reason focus groups and bringing people into a conference room does not work for user centered design. It takes observational work in many cases and data collection of the actual use environment to really understand the true needs of the users.

In that example that I showed if you had brought emergency physicians and nurses in the room and asked them what they needed their IT system to do they would not have realized all of the things that the whiteboard was doing for them that they needed to reproduce. So, that's one problem with just engaging the clinicians at the endpoint. I think it needs to be early on observational and data integrated into the early design of the systems.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, thank you and actually you spurred a whole bunch more questions, but there are a whole bunch more questions out here.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

I want to ask a question...

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Well go ahead then, why don't you go ahead, Liz, and then why don't we start and go just right around from Joan once Liz is done.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Yes, thank you for the results. It is interesting to see what you found. What I didn't hear you explain and you've touched on this in your last answer, which is why I asked Marc if he'd let me ask my question, when you talked about what you found with the vendors did you finally design specification that included workflows and did the vendors engage with an end-user that showed the new work afterwards?

Because when you talk about the problem you discovered, which we're all aware of, I didn't hear that, you have a lot more research I know, so what did you find with the vendors so that there was some kind of communication tool with end-user this is how your clinical practice or workflow is going to change.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

So, I might need a little bit of clarification on the question, but certainly the vendors that are in that well-developed category, the well-developed UCD processes category are spending extensive amounts of time doing observational studies that Terry touched on to understand end-user workflow and that's being built into the system. Some of that is happening during the implementation piece as well and so we are seeing that with the well-developed group.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

The reason it's hard to answer that question is there was a broad range.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Right, of course.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

And so at some – to answer your question directly we saw none of what you listed in others we saw a lot of it.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Right and the difference though is that an observation of what the current workflow is and a projection of how that workflow is going to change is critical to those really trying to do design specifications for the vendor and work with them and that's why I was asking are any of the vendors that you worked with doing more – it's critical that they understand what the current state, but are they projecting the end-state so that somebody can make a better design decision?

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

I would say that few vendors are doing some of the pre-analysis for each specific adopter. So, as they're developing our products they are doing a lot of observations and then moving into development, but when it comes to the specific implementation pieces for each adopter I think very little of that is being done, it's extremely time intensive.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Right, thank you.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, Joan?

Joan Ash, PhD, MLS, MS, MBA – Professor & Vice Chair, Department of Medical Informatics & Clinical Epidemiology, School of Medicine – Oregon Health & Science University

I really appreciate your attention to Bin 2 and I have a couple of questions. The first is, I know you can't name names, but could you characterize the vendors in some way where they all EHR vendors and was there a relationship between the size of the vendor and the amount of attention they pay to user centered design?

And my second question is what recommendations would you have for us? What advice would give to us to make recommendations to the ONC?

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

So, in terms of the EHR vendors to sort of better categorize resources and so forth it's hard to provide – you can go back to the slide, thank you, there is certainly a relationship I think between the resources that the vendors have at their disposal and what they're doing on the usability side.

Now we're not able and have not been able to look at the end products to see that complete relationship and I think that would be the next step for our research team to do to actually look at the specific EHRs and see whether there is a relationship between resources perhaps usability staff and how usable that end product is. So, we were not able to do that.

All of the vendors were EHR vendors and they also had, you know, other billing-type products and things like that out in the marketplace.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

But, I think it is important to note that we definitely did not see a correlation that you're talking about, we saw some very large vendors that did not have a well-developed usability user centered design process and we saw some small vendors that had very impressive integrated user centered design processes.

Joan Ash, PhD, MLS, MS, MBA – Professor & Vice Chair, Department of Medical Informatics & Clinical Epidemiology, School of Medicine – Oregon Health & Science University

Thank you.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

The second question, right do you want to touch upon some of the second – I'm happy taking a first stab, so I think some of the clear recommendations that our group is really focused on one is perhaps a more rigorous process surrounding inspection of the UCD processes that are in place by the vendors and, you know, I think summative testing is important to have, but I think if there's a way to look at some of the byproducts of the true UCD process as the certification requirement that could also be beneficial and perhaps a little bit less burdensome to the vendor. Particularly, for the group of well-developed vendors, there are several formative testing elements to their process and if we can better support looking at those elements that might be advantageous.

Some vendors did express that meeting the summative testing requirements requires resources that would otherwise be used to conduct other usability test on new features, new functions and so forth and we certainly don't want to put vendors in a position where they're forced to dedicate limited resources to the summative testing requirement at the cost of other perhaps safety or other usability tests that they would be conducting.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

So, by my math we have about one minute per question so we're going to have to move quickly. Dr. Heyman?

Joe Heyman, MD – Whittier IPA

Forgive me for my rambling. I started using an EMR in 2001. When I started there was no big deal about workflow and it was relatively easy to use, it was designed by a primary care doctor and I'm an OB/GYN. As soon as we started really having EMRs become mainstream the first thing that consultants always said was you have to teach people about how to change their workflow and I thought that slide that you put up about the ER and the whiteboard was a very good example of why maybe the right thing to have said was maybe we should first study the workflow and then design the EMR around the workflow instead of designing the EMR and then telling us we've got to change our workflow. So, it's just one of the things I was thinking about.

The other thing I was wondering is when we make recommendations about Meaningful Use criteria shouldn't – and maybe we are, I don't know, but it seems to me that usability should be one of the major criteria when we're thinking about which criteria for Meaningful Use we're going to impose because my experience has been as each new Meaningful Use criterion is added my EMR becomes less and less usable. So, maybe you could comment on that.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

I guess I would comment that I agree with your points and thank you for articulating well what we were trying to say. The Meaningful Use making the EMR less useful I think has to do with the way it's integrated into the system and if we can take the Meaningful Use criteria integrate them in so that they match the workflow and don't become an extra step for the clinician and they're easy to use in the bin one sense as well then we have a home run and everybody will be happy.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

There is a Tweet somewhere in that Dr. Heyman. George?

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Following on that, having built a 7,000-user, three-million patient EHR which was terrible on your left bin because it was ugly, beloved because of its right bin there was not that there was a workflow and you build your system to match it but that the workflow emerged from the combination of the users, the tasks and the system, because with limitations you can't do everything and even if you have a vision of where you want to end up it takes years to get there because you have to iterate and pull the users with you over a period of 15 years now.

My question is if every hospital is different, every practice is different. I mean, how is this going to be feasible? Do we get everyone in the country to adopt a similar workflow just so these vendors can do this or do we de-emphasize the vendor and say they're building toolsets and we vastly expand our consulting industry so they can work with each hospital the way each homegrown vendor has been working with their hospital over the years. I mean, how can we really get to the point that Joe is not complaining about these things?

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

That won't happen.

Joe Heyman, MD – Whittier IPA

I'll always find something to complain about.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

I mean, is it feasible?

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

Yeah, I think it's a great point and one thing that I can say that our team learned, we knew this was a huge gigantic feat and we learned how big it really is, but I think one of the ways to address what you're talking about is sharing responsibility. I think that the end-user groups, the purchasers of the EMR have a responsibility to implement in a way that takes these things into consideration. But, I think that the vendors also have a responsibility to share what they've learned from other implementations in terms of what's safe and what works.

And although hospitals and offices have differences they are more the same than they are different and the workflows in one ER for example are very similar to the next ER with some minor differences. But the needs and the wants of people are vastly different. So, with a little bit more of a paternalistic approach I think we be able to streamline workflows that we know work for many people in the same specialty or focus area.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

I'll just add briefly to that, in addition to sharing responsibility there is also sharing information, right, in there right? So Terry talked about and we talked the vendor sharing information with the adopters and providing some guidelines, but adopters should also be sharing information with each other. There's lot of examples of I think pretty well-designed EHRs that are then modified immensely during implementation leading to perhaps a – product and vice versa and if we can share those guidelines across providers I think that would be helpful.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

All right, so we have seven minutes, Cris.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

I'll go fast. Question one, how would you characterize the usability of EHRs compared to technology products for domains of similar complexity?

Number two, in response to Joan Ash's question, I think you said something that could be done would be to have awareness of the vendor's presence of user centered design in their products. But I'm wondering if there are some kinds of objective measurable usability standards that exist in industry that could be applied in the form of regulation.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

I think we both can take the first – the difference I think is dramatic to people who have worked in different industries and then come into healthcare. People's heads spin in disbelief about the usability issues, in the nuclear industry, aviation industry and the military products are not produced without extensive user centered design research and data and we, as part of this project, we've been talking to FAA officials about the way that they look at avionics and the usability of avionics and it's extremely detailed. If we tried to implement what the FAA is doing in healthcare there would be a revolt.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

And to the second question, I think there are methods that can be used to really quantify usability systems and Lana at NIST I think is doing a fantastic job working towards that end, it's a very, very complicated problem given how different the EHR systems are, given the nature of the data and having standard dataset alone is not going to – may not be able to do that given the way that functions are completed, you know, counting clicks is not necessarily going to do it, quantifying errors takes a lot of time and is an intense process and so I think we can get there but we have to work at it a bit.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Paul?

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

A similar question, we're all on the same track. I mean, it was an interesting statement you made that you didn't see the same need for, at least, or the amount of customizations in products in other industries. So, the question is whether we need this amount. So, maybe some questions – maybe a – do we need customization for every specialty? And would it be reasonable to expect the vendor to have studied every specialty even if the workflow is fairly prototypical?

If the answer to that question is "no" it's not reasonable then how do we divide the shared responsibility between the product vendor and the user base that has to implement these things and what can we do to help with policy, training, education? What can we do we do to raise the bar for everybody if our requirements in this industry, healthcare, is fairly unique compared to others?

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

I can answer your first question very definitively. We absolutely do need different implementations and products for different specialties. They can be the same overall product but different customizations. I think the more important point is if you go to a birth center at one hospital, a birth center at another and another they're all going to have different wants and desires about the subtle ways that it's implemented. They all have different subtle ways that their workflow is different from the next. I think those variations are the variations that we can reduce. The similarities in the same areas between hospitals and offices and outpatient settings are much more similar than the similarities between specialties.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

I think it is – it may be a bit unreasonable to expect vendors to do the kinds of detailed workflow analyses for all subspecialties, particularly given the development timelines in which they are operating and so there needs to be another method there to facilitate that process, exactly what that method is I'm not exactly sure. We're certainly not policy experts but I think there are definitely guidelines that can be provided to facilitate that and we can do a little bit more work to see how we can help out.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, great. Larry?

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So, this has been really great, some really rich things here. I particularly like a lot of your insights into the cognitive load issues to get us away from just counting clicks and looking at, you know, is the screen pretty and can I find the one thing I'm looking for on the screen, but really does it help me accomplish the task.

A couple of things jumped out. So, one is sort of my thinking out loud about this notion of mass customization. So, what I'm thinking is, you know, we have cell phone Apps, right, and tiny companies, individuals create a much focused app that lets you do a few things and lets you tweak those a little bit and you use it or you don't use it.

And sort of in healthcare we have these giant monolithic Apps that, you know, we get into huge implementation cycles which gets into sort of I think one of the key things I keep hearing from you about time, how much time it takes to do this, time for the developers, time for the providers to implement and then we have the regulatory clock ticking off, you know, we're about to start the next stage and you've got to be on board.

So, two questions, one is any thoughts about, so how might we think about our examples in other industries of this notion of mass customization. So we roll out the standard thing but we do have some ability to control it, you know, not every plane takes the exact same flight path but the cockpit may be laid out similarly even in our cars the controls are laid out very similarly.

And then this other piece about time. We're clearly in a time of a lot of rapid change. Any sense of how long it takes to get to a steady-state, where the known performance of the system is known and you're working on a baseline, and then you can sort of work up and down from that?

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

I think the Apps question – healthcare is a complex adaptive environment which makes it very difficult because the adaptive part of a complex system means that the humans change things on a day-to-day basis to keep it safe and efficient, but I think that moving more towards what you're describing with the App where there is less customization is going to be a positive thing for us.

I think one of the problems is that this is too market-driven sometimes and people think they need a lot of customization that they may not need and what we all would do in a very reasonable attempt to serve the customer, we have developed customization frenzy in a sense and I think that makes so much variability and that ends up hurting our usability.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

To address the second question, I don't have a specific number on when we would reach a, you know, how much time we would need to get to a steady-state with these particular systems.

I will say that for that group of well-developed UCD processes that vendors have they're quite impressive and they have developed particular methods to meet the difficult timelines that are in place. If there is a way to facilitate the sharing of those methods and that information with some of the other vendors that are in the other two categories I think that would be extremely beneficial and I think looking forward, as these new products are coming out that do have that, that vendor UCD practice in there I think we'll see some tremendous improvements. It's the legacy systems that are certainly challenging.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, so I'm looking at our chairs we're now eating into the second panel. I've got have three more questions here queued up.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So, what I'd suggest is we'll give five minutes, that's all Marc, and then we'll take five minutes out of the break so we can get back on schedule.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

I guess we can move.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So, Michelle is saying, okay, go ahead.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

All right, Anne?

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

All right, I'll be really fast. I hear clearly usability centered design equals good. Where is it documented what is out there today and which ones are rated good and who says they're good? Do you have information on that because with all of the complications and the customizations that we're talking about and change is evil and people not knowing their workflow, and driving it from the bottom up or the top down, I'm having a problem thinking about a place where I would have confidence in looking at what is good? So that you could look to a base of physicians or hospitals and say this is good. So where is the UL list of approved good, usable products do you have that or do you know of it?

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

Well, you raise a very important point that does not exist. As all of know there are self-reports and surveys where people are asked how much they like and their self-perception of these, but they tend not to always reflect reality in terms of safety and efficiency and so they're not what you're talking about with a very specific measure to help guide people and I think there's a real need for that.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

There definitely is a real need for that but at the same time UC processes generally have been used across domains, across software applications and I think that by inspecting those UCD processes and making sure that there's rigor in those UCD processes we can have some amount of confidence that with the practice of that sort of method we'll end up with a good product, but certainly the work needs to be done to examine those products and match it with the processes being employed.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

Great point.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

All right, thanks. Wes?

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

So, this is going to be somewhere between a comment and a question would you please react to what I say. Regulatory processes are incremental, that is nobody starts from the ground up to design a new system to meet regulations and they are relatively short-term, they have to be responded to within a year or two of their publication, sometimes less and need to be reasonably objective. It can't be someone's opinion that this is less dangerous or more there has to be some buy in.

I've heard several people say, oh, I ask them "can you have an objective measure of usability" and instead of saying – and I ask them "do you" and instead of saying "yes we do" they say "yes we can that work could be done." Has anybody done it? Is it anywhere? How can we develop criteria that we can fit into the increment ability and the timeframes that are associated with regulatory processes? Thanks.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

My reaction would be if you look at other agencies like the FDA and the FAA that regulate items that include usability they do not look at an objective measure necessarily, but they look at the process which led to the product.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

There certainly are some subjects of methods in place. For example keystroke level modeling is one of those where you can literally quantify the amount of time a click takes, the amount of time a mouse movement takes, etcetera. Now whether those can be expanded to fit the needs of the EHR and to provide important information for us to make decisions I think is a different story and I'll give you the same answer that you've already heard, there are people working on that.

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

And are you saying those objective measures are actual measures of usability rather than time spent or something like that?

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

Those are measures of time spent.

Rollin (Terry) Fairbanks, MD, MS – Director, Emergency Room Physician, Associate Professor of Emergency Medicine - National Center for Human Factors in Healthcare, MedStar Health Washington Hospital Center, Georgetown University

Proxy measures.

Raj Ratwani, PhD – Scientific Director – National Center for Human Factors in Healthcare, MedStar Health

Proxy, right, right.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Thank you, I've been given the hook. So, sorry we didn't get to the last two. When we go next time you might go the opposite direction, so we actually get them in. Thank you so much Dr. Ratwani and Dr. Fairbanks and we really appreciate this and thanks to the team. Larry?

[Applause]

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So now we're going to move into the next panel which is busy being set up. So, these are eligible professionals, people who have hands on the patients as well as hands on the keyboard or hands on the screen.

And a little bit shift in focus here as we go from all this enthusiastic discussion about how to build usable products in the abstract if you are looking at the vendors to what's been the experience with Stage 1, preparing for Stage 2 and your insights into where we ought to be going with Stage 3. So, with that as introduction why don't we start with Chris and I'll let you give a very brief introduction for yourselves, we have you bios. Time is pretty tight, so you only have five minutes each to do your presentation and then as you can see we have lots of discussion.

Michelle Consolazio – Office of the National Coordinator

Sorry, Chris, before you start I just want to remind the presenters that you will be limited to five minutes and there will be a five minute clock and we will cut you off at five minutes just to warn you.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

Fair enough. My name is Chris Tashjian I am a full-time practicing physician. I work in rural Wisconsin. I'm going to fly through the first slides simply just because I want to get to the meat of the matter. I've always been a really strong proponent of Meaningful Use because I think it improves care. I think we have to be careful that we put in measures that become hurdles and hoops, rather than improving care. That's one of my biggest concerns. We're all about improved outcomes where I live that's really the name of the game for us as eligible providers and people that work full-time in the trenches.

So, I'm going to jump right into it. One of the core measures that we're really struggling with in Stage 2 is this 50 percent electronic access. If we work in an area where edge, that is 2G access, is what our phone service is and a lot of people have dial-up, getting 50 percent of our patients online and in a portal that we have and we can make work is really a challenge. And what happens is our providers see that it becomes a hoop that they no longer see the value in it, they say we're just doing this to meet the criteria and it really degrades the whole Meaningful Use process for those of us that are really encouraging it.

The 5 percent view, download and transmit, I'll be honest with you, I don't have a problem with this, in fact my feeling is if we get you on our portal we want 100 percent. So, you know, if we're going to go to trouble to get you on it we want to use it but it's really that first hurdle of 50 percent is really high for some of us and we're coming up with creative solutions, but the solution then becomes we're not using it we're just getting people to cross the line so we can meet the goal and that really, I think, detracts from Meaningful Use.

The next one is summary of care for all records, for referrals. We think, again, great idea. The ten percent electronic is going to again be difficult for us because it's out of our control. We don't control what our specialists do. We're individual physicians, we're in private practice. Now when it came to lab we went to our lab vendor and said, you either give us discrete values or we get a new vendor. It's really hard to go to our cardiologist and say you either get online or we're going to get a new cardiologist, because this is somebody we've developed a relationship with we trust our patients with and so, again for us it becomes we can influence them, we can push them, but it becomes a little bit about, again, it begins to look more like a hoop.

And if you notice while I'm talking here I'm not talking about very many of these. I'm really a proponent for all of the other core measures and such and I really think that they do improve care and that's again what I'm all about. I see I'm halfway done with my time.

Okay, what we need again is this ability to search for a Direct e-mail address or a Direct, you know, secured access. And I sit on the Health Information Exchange Usability Group and again that's one of the things that we see is going to be critical if we're going to have this electronic exchange of information. From my understanding the NPI numbers help us fax back and forth but there is no central repository or central use of this is a physician and this is his Direct address and that would be incredibly helpful if we could set up those standards.

Finally in Stage 2 is the menu items for us really aren't menu items because three of them we can't do. Imaging results, we don't have the technology and the capability of doing. Cancer registry is not available; our state doesn't have syndromic surveillance so the only way we can do it is to do the other three and one of the three items with the specialty registry we couldn't do without having a national vendor. If we had a small vendor we'd be stuck, we just couldn't make it work.

Reasons that providers aren't doing well is again, change is hard. I really think the reward of better care is important. Moving from Stage 1 to Stage 2 many people that I've said that don't have national vendors say their vendors can't keep up and so they're either going to have switch vendors which is very expensive or they're going have to give up their independent practice and join a big hospital system which to me is equally painful.

To me the key is standards, you know, the standard CCD, standardized communication, as I talked about the Direct addresses and then from a quality stand-point to Stage 3 is we really need standardized quality reporting measures. I don't want to have to report one thing to PQRS, one thing to the insurance company, one thing else to the state. If we can standardize that we'd truly believe in it.

Last but not least, I do think it's all about outcomes. We can tell you that 90 percent of our patients, I'm a Million Hearts Fellow, 90 percent of our patients have their blood pressure controlled. The reason I can tell you that is, because measure it every single month. So, again outcomes are really important. Long-term-care I'll just say that right now they don't have the capability we've worked with them, we're very close with them but they just don't have the resources.

Last but not least is: audits. Audits are going to be real tricky. The more we can do with the Direct submission, hopefully that will satisfy the audit needs because you have to rely on the vendors to be able to do that and maybe they are the ones that need to be audited. And my final plug is for RECs. RECs are a great resource, they're tremendously valuable to us in the field and I'm really nervous about February if they go away. Thanks.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Great, thanks. So Craig?

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

Okay, I have prepared something because I don't think I can get it done in five minutes if I don't do it really fast. But before I do that the point that was made in the last talk about legacy systems and getting the usability retrofit into legacy systems, on a larger scale almost everything I'm going to say in the next five minutes is saying that everything that we're doing here, everything in HITECH is attempting to retrofit something into a legacy system and it's pretty difficult.

I want to talk about two general points; the first is about the audience on whom we are performing our implementation and for whom we are attempting to improve usability. I want to ask you all a question, healthcare providers can't answer. How many of you carry a pager? How many did even five years ago? Okay and think about this how many of you handwrite final versions of vitally important documents which are meant to communicate to other professionals? How many of you did this, even five years ago? The answers answer to these questions are substantially "none."

None of you used pagers. I saw the wire, even drug dealers have moved on and not just the other day they moved on years ago. And none of you use handwriting to create mission critical documents of inter-professional communication. The idea is absurd and we all know that. But, what we must be intellectually honest and admit is that a nontrivial percentage of healthcare providers today, in 2013, maybe even a majority still use pagers and still handwrite or want to handwrite prescriptions and notes and those are just examples.

I think one of the critical implementation usability issues we must ask then is why. Why do doctors cling to the past? First, it's fear of transparency. They fear the loss of stature or legal ramifications or that someone will figure out we don't know everything. Of course there are always edge cases that are quoted for which total transparency with the patient isn't ideal but those are rare.

Second, to be blunt, it pays to fight this change. Healthcare providers are still, in most parts of the country, paid for delivering interventions to ill people and many are paid extremely well for this. They are dis-incentivized on an emotional psychological level and on a financial level and the offset of \$44,000.00 or \$65,000.00 over five years is not even close to offsetting that.

In the spirit of transparency though let me tell you about a recent incident in our place. Basically, on admission medication reconciliation a specialist continued a drug that they knew nothing about and which the patient didn't need and hadn't had in two years because they assumed it was correct and because it was in the EHR. Thankfully no real harm occurred, now probably everyone here and everyone on the phone realizes this was pilot error.

This doctor messed up, but these doctors with whom I've spent time discussing and educating disagree. They think in no way was it their responsibility. They are the specialist, they get paid to operate on patients not to manage medication lists and they insist that this was an EHR caused error. This is just the other day, just a month ago in June of 2013. Another physician told me a couple of months ago that the drug allergy alerts were a waste of time because he'd never made a prescribing error in a decade of practice as a family doctor.

So, my point is that we think we're selling ice water to people in hell, but the people we're selling it to think they are Eskimos. It doesn't matter if the ice is implemented efficiently and in a lovely cup with an easy to use handle they don't think they need it. Please, don't forget this seemingly simple point. So, how do we convince them they're in hell, I think there are two answers. Part one: usability, if the HIT system made their lives easier they'd embrace it.

Part two is the hard one; you've got to change how we're paid not slowly over several years. I mean, the policy recommendation you need to make is that the legacy system has to be destroyed, so that's impossible, but I'll go back to reality and, you know, what happens to legacy systems in this country is the music industry did not reform itself and now Apple controls it.

We have to disrupt ourselves or be disrupted. To paraphrase Good Will Hunting, "All the science I learned in medical school could have been had with a half-ass broadband connection and Wikipedia." That science is far from all there is to medicine but there's a lot of truth to that. Disruption will come.

My second point is strongly symbolic with that, not too long ago I polled several colleagues and asked what percentage of the patients, colleagues from other institutions, I asked what percentage of the patients in their EHR had a complete and accurate problem list, past medical history, surgical history, family history, and the consensus was 25 percent. Twenty-five percent of patients in EHRs, with accurate historical data, that should scare the bejesus out of you.

At Tech we are piloting a new intake process which will attempt to scrub every chart for accuracy before the patient arrives carefully reviewing with the patient. Some of this could be done by the patient themselves given the right tools.

So, the point is Meaningful Use attestation may have reached some level of maturity but I think we'd be kidding ourselves to assume that compliance with every measure guarantees the accuracy and completeness in every piece of data. The measure required is that there was a problem on the problem list that did not require an accurate problem list in any way.

So, that's what I want point out, on the path before us I see a cart that assumes the profession understands and agrees with the transformation we seek and I see another cart that is trying to race ahead patting itself on the back for the progress it's made deeming Stage 1 measures and moving quickly to outcomes-based measurements, both carts are pointed in the right direction but behind them I see their respective horses. The horse in the medical profession clings desperately to the status quo and doesn't even know why it should try to pull its cart and the horse of accuracy has...

Michelle Consolazio – Office of the National Coordinator

I'm sorry, Craig, your time is up.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

It cobbled by poor usability and immature tools, that's it.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Thanks, Chris. Paul, you're up next.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

Thank you, I'm Paul Kleeberg, I work for Stratis Health which is a quality improvement organization in Minnesota. I also work for REACH which is a Regional Extension Center that covers Minnesota and North Dakota. So, the bulk of my comments are in the distributed materials. I heard about this on Friday so please excuse some of the typos in this.

I would like to start out by saying some of our greatest concerns are really regarding the critical access hospitals, the rural providers and other folks that don't necessarily have access to the resources and things that are within larger communities to be able to adopt and use electronic health records.

To go on, on Stage 2 some of the greatest challenges I think our around the CDS interventions which sometimes many people think are just check boxes and alerts, health information exchange which may some require additional expense on the part of providers, imaging results which may be difficult to put into some of the EHRs, registries, patient engagement and privacy and security which is little understood.

Our approach as an extension center is to help them with technical assistance to provide them with education and also as we heard earlier to help work them with collaboration with each other so they can find out from others what others are doing so that they're able to be successful at what they do.

Specialists I urge working with the specialty societies. For nonparticipation you've heard a lot of the reasons I won't go into them right now, but what we try and do is encourage or what I would encourage you to do is outreach to the patients, peer pressure may be something that can be applied that will help people to adopt and I think the other thing that we need to emphasize both as an extension center and in what we do is we want to make their lives easier. It is about quality; it is about usability and is about making their lives easier.

For Stage 3 physician notes I think are critically important. I think one of the challenges we have right now is that we're existing in two worlds. And the implementations that I saw that were really successful is when people moved away from paper and they are in the EHR and that is it. Anything that we can do to get people off of paper I heartily support.

Patient generated data I think is another component that should be on Stage 3 either manual where the patient enters it or from patient devices, I think that will help also make provider's time easier. Deeming I strongly support some of the candidates for that I thought would be patient reminders, CDS, patient lists, I've seen you've talked about a number of them, I'm no expert, I'll skip on that.

In terms of consumer participation, again sharing information with the patient I think is one of the greatest things we can do as providers to get people engaged and that just is not online sharing, but it's also in the office visit where you angle the computer towards the patient and you have a shared document that you're working on teaching that to providers I think is especially important.

Patient entered data I've already mentioned is a barrier that will help overcome the barrier. Provider attitude I think is critically important. Again, providers need to see how having the patient be engaged is going to make their lives easier and I didn't put this in the document, I thought about this later, patient understandable terminology. I've seen some patient portals that put language towards the patient which they cannot comprehend and I don't think that is a real value to patients.

When we talk about exchange and long-term post-acute care we are involved at Stratis with a grant from CMS to sort of improve that communication between the hospital and post-acute care. So our role right now is to work on optimizing the workflows and some of the existing tools but we think it would better enable HIT through new standards and voluntary EHR testing for those potential nursing homes so they know that their equipment will work with hospitals.

I also urge that you talk with the physical therapist with the other folks who need data that comes from the hospital to make sure that we create the data elements that will aid in that information passing back and forth. One of the things that I've heard Mike Zaroukian say on some of the calls is the fact if we built it in a way that makes sense providers will use it that's what we really need to focus on.

Vendors, we heard great stuff earlier on about optimization, paying attention to workflow, potentially videoing in and watching how providers are using it. Optimize provider workflow after the implementation not just parachute in and put in an EHR but come back and have that be a part of the process. Short how to snippets that I can access when I'm using my EHR so that if I get stuck I can click on it and find out how to use it that are just a few seconds long not an hour-long presentation.

Finally, regarding audits, yes, please give us more information about audits. Create guides and provider calls that allow us to understand what we need to do around the auditing situation and what we have done at our extension center is actually attached a couple of pre-attestation worksheets that we use with some of our customers to help them understand what may be required that material is in your handout. I thank you for your time and I wish you luck with your creating of standards.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Well done.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Nice job.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Thank you, okay, great example. Okay, John you're up.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I'm John Bowman; I'm Chief Medical Officer for OrthoVirginia a group of 43 orthopedists in Richmond. I also bring comments from a sister organization OrthoCarolina, 110 orthopedists in Charlotte North Carolina. So, I'm really trying to speak for the subspecialties in the voice of 150 orthopedists.

My first comments address questions one and three. What challenges are the greatest and why are some orthopedists or subspecialties not meeting them. First of all many EMRs were never designed with subspecialty care in mind, they were often designed for primary care people. So, we're a little bit behind the eight ball right away.

There is a lack of functionality in some areas. Computerized physician order entry of lab in the office setting, receiving that lab data back as discrete data elements and secure e-mail are not yet well worked out in the Richmond area. We have EPIC, Cerner and MEDITECH each about one-third of the market in Richmond and they're reluctant to share any data with each other, which means, on Monday morning if I were to see an ER patient from another chain than my hospital, I'd have to repeat the x-rays. So, images and hospital exchange of data needs to be encouraged with your Meaningful Use.

Secondly, many of the measures like demographics, smoking history, online health information access, image access, clinical summaries, transition of care documents and linking all that to online education, that can be obtained with a good portal. We have just invested in a new portal, our first one withdrew from the market so we lost \$75,000.00 there, small change I guess, our current upgrade for our EMR is \$80,000.00, a portal is \$75,000.00, MA certification will be \$15,000.00, retraining and IT cost will be about \$100,000.00 and then there will be annual expenses of \$135,000.00 annually thereafter.

Smaller groups just can't afford that. They're spread too thinly already with resources on time and finances. There are just too many tasks in our in-basket. We have a PACS upgrade, EMR upgrade, PM upgrades, new portal, new interfaces for laboratory exchange with our hospitals all on deck now and I don't know how smaller offices can do that.

Question six, patient engagement. So, we install our new portal, our patients will enjoy it they'll be registered when they show up at the front desk but then they have to fill out for their internist, their cardiologist, their dermatologist, their gynecologist and the kid's pediatricians, if we don't get interoperability and a standard portal data set how we will engage patients. They will tire of that.

In medicine we are at the same place that the ATM card industry was in the mid-1970s where you had to make sure that machine took your card. I also sympathize with those in rural areas, many of our patients still do not have broadband access or they do not have an electronic device at home.

Question measure 12 and 16, disease conditions and immunization history where we're recalling those patients, we need some flexibility for subspecialists in those menu choices. Why don't you look at some of the newer analytic programs that many subspecialties are installing and encourage groups to use clinical analytics which are coming to the forefront now, to use those performance measures to find their outliers and bring them back into line.

Questions 9 and 10, vendor and CMS responses; why not allow vendors to coalesce their reporting for Meaningful Use and PQRS into some common format so that there's not so much duplication of reporting effort. And why not let some of the Meaningful Use measures get us to ICD-10. After we get all this other stuff done we have that looking at us next summer and we're struggling to be ready for that.

We'd like to see improved helpdesk support. Push a standard for narcotic ePrescribing. We as orthopedists use a lot of narcotics and we still print them out and we still sign them and give them to patients and they have to drive to the office to pick up a refill if it happens to be scheduled too.

At the end of each core measure I would suggest that the documentation is listed that will be helpful for providing audits, what is it you will want to see and precisely what measurement things do you want to see.

In summary I have concerns about interoperability and inadequate or inappropriately inflexible measures for the subspecialist. I'd ask you to develop a standard portal so that we can have patient buy-in and have all of that registration filled out before my waiting room is full of patients waiting to fill it out on clipboard. And please learn how to incorporate some of the new measures that will utilize ever more sophisticated clinical analytics and functional outcomes that are specialty specific. Thank you.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So, really great presentations, thank you for that. Are there some comments or questions from the committees? No? Oh, here they come. Okay. Well John, we'll start with you and we'll see who gets inspired.

John Travis, FHFMA, CPA – Senior Director & Solution Strategist, Regulatory Compliance – Cerner Corporation

My first question could be – I have two questions for any of the panelists kind of linking back to the usability hearing, the impact of regulatory requirements I think especially for measurement on usability, if any of you could comment on that, the PQRS measures in the experience physician practice and as those evolve over time any suggestion as to assessing their impact on usability?

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

You know, I think – this is Paul Kleeberg, again we heard earlier when you offered a similar question I think or someone did, the measure of clicks or the measure of response time, I think one of the things that I think volunteer testing was going to do was to give scenarios and see how long it would actually take to do something. I think usability testing and setting criteria for that could be rather difficult and my thought again would be to – well now I'm blanking, I apologize, but if I remember I'll come back.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

The only thing I can say is that we've seen our EMR get better, you know, we implemented in 2010 and we see it more and more usable. I'll give you the biggest example is ePrescribing. When we adopted it in 2010, it was more work than hand-prescribing; now it's less work. When it's less work than hand prescribing it's much easier to go to your colleagues and adopt it and gain the value. So I'm not sure how you measure it but clearly we've seen an improvement and my feeling is that we expect to see more improvements, I mean from the provider stand-point, that's an expectation of our vendors.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I would comment that usability is not always the issue sometimes what you have just hasn't been optimized and doctors haven't bought in, they haven't learned how to use the product well. So, we have a role there to play. The other point about usability is you can see something you might like better in another system but when you have 100 orthopedists bought into one system you really can't afford to go out and buy the next best product tomorrow you have to develop the usability and optimize what you've got. Most of us aren't jumping ship.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

The comment that I was going to make that I forgot was to actually require some sort of follow-up on the part of vendors to examine work flows and see what's working in order to evolve the process because as you can imagine when you implement or try and keep up with the changes you do your best job as a vendor to create something but you don't really know how it's going to work in the environment and it's an iterative process. So if we could somehow hardwire the iterative process into this I think it would be of value.

John Travis, FHFMA, CPA – Senior Director & Solution Strategist, Regulatory Compliance – Cerner Corporation

My second question, perhaps mainly to Dr. Bradley, in your written testimony you made I think a very valid comment about building in some manner of audit work tools or audit preparation tools. Could you elaborate a little bit on that and what role you think CMS may play in specifying requirements that could be useful? I think auditing has been a retroactively learned set of requirements as to what kinds of audit evidence really would be a part of that preparation toolkit maybe the advantage of hindsight is there now but it certainly wasn't two years ago. If you could elaborate I'd appreciate it.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

Well like everyone else probably we have what we call our audit workbook or our audit notebook it's not on paper but for every physician that attest we keep the folder that has all of the functional reports out of our EHR plus all of the reports that we – which is not many, but that we had to create separate from the EHR, plus there is a whole set of Stage 1 criteria that are yes/no that the EHR doesn't really have a way of helping us with.

So, to me I would like to see the EHR generate that. We could push a button and it would generate our – here's the PDF of everything you need to attest and become bulletproof in an audit situation. Because the difficulty with audit I think for most people who have attested is not – no one is really, I doubt, attesting that hasn't done the work, it's just a huge pain in the ass to keep up with all that stuff and there's no reason that that couldn't be pushed to the vendors.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Thanks, Paul Tang?

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

I think I have some good news for Chris. So, as far as the number one obstacle you had with the 50 percent it's – this is the most misinterpreted requirements, it's 50 percent offered so even if 50 percent don't take you up, if you've made it available to over 50 percent that qualifies, so we can do something for you.

The next question, the usability it's really hard to do, particularly Bin 2 usability. What do you think of the idea of more crowd sourced information? Much more for the lessons learned then to do the evaluation, of course it can help apply some peer and customer pressure to up the ante on usability, but we're trying to look for ways – I don't know that there is a test. I mean, the previous panel said there really isn't. So, how do we communicate either prospectively to you making a decision to buy or sort of raise the ante for everyone involved in the field?

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

Is there a way – you know, I think one of the things that came up in the first session was usability. Vendors need to share their usability findings and their usability recommendations to the end-users and end-users need to share amongst themselves and back up to the vendor what they find.

But I think the missing component of that is vendors need to share with vendors. And, you know, the avionics may be made by 10 different companies and planes but they all look the same. I mean, they all look essentially the same and so I think that that's a huge key I think is that vendors have to somehow be encouraged or forced to adhere to a much stricter standard or to share.

I think eventually from a crowd sourcing point-of-view you'll find what the avionics should look like if you just look at what everyone is doing and put it in a pile but we don't have access to that and they don't share with each other.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

It would be really interesting from a provider stand-point is I live in two worlds, my hospital runs EPIC, my clinic runs Cerner, I see really good things in EPIC, I see really good things in Cerner but I never see them cross and that would be really helpful if we had a way to suggest that to both sides to say EPIC can you adopt some of these Cerner things, Cerner can you adopt some of these EPIC things but we don't know what the capabilities are what rules we would be breaking and things like that.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Okay, thank you Paul. Christine?

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

Thank you. So, first is to say thank you guys each of you really offered some practical solution oriented ideas for Stage 2 and 3 and so I really appreciate that. They were very, very helpful; I took a lot of notes. And thank you Paul for the clarification that was when my card went up fast.

So, my question is to you Chris. You talked about summary of care document and we're struggling with that, right, because of exactly the reason that you've identified where you can't control everything about the external medical trading partners that you have. We don't want to set up a situation where the ability to meet a federal program requirement is what's driving your referral patterns, right, that doesn't make any sense. But on the other hand we want to incentivize that sharing electronically for all the reasons we know around efficiency and safety.

So, as I think about Stage 3 and I think about the fact that more than 7 out of 10 hospitals are Meaningful Users today, I think it's around 60 percent of eligible providers as well we're making big gains in adoption rates. So, when we think about Stage 3 a couple of years from now is there a way that you would either structure that requirement differently knowing that we will have much more adoption rate or is 10 or 20, or even 30 percent of electronic exchange more reasonable at that time? We're trying to think through that third phase now.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

Well, as I look at it, it goes back to one of the earlier suggestions is if we – and I don't quite understand how the NPI works and how I can fax a record to just about anybody, if I can fax a record to anybody why can't I electronically send it to a Direct e-mail box to them? And if we could set up the same kind of system, as I said this has come up in the Health Information Exchange Workgroup a number of times, I think then we could move to not only 50 percent summary of care but then 50 percent going electronically if we had those capabilities.

So, you know, my recommendation would be is to encourage CMS or whoever makes those decisions to say let's give everybody or let's have everybody – if everybody has a fax machine, everybody should have a Direct e-mail box.

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

And that would be not just Meaningful Users or people who are even eligible for the program that would be, you know, providers where I assume CMS has some influence or relationship but aren't necessarily part of Meaningful Use or even eligible for it. Is that right?

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

Correct, yeah, because again, I had nothing to do with it, I just ended up with an NPI number. I have no idea how that happened but it just showed up one day. If a Direct e-mail box showed up one day and said here you go, you know, you're responsible for this just like you're responsible for your faxes I think that would be great.

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

Thanks.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Thanks. Marc?

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Thank you for your feedbacks and comments. I'd be curious on any of your thoughts about one of the topics that came up in the vendor user centered design discussion about mass customization and the need that you've had and experience to customize the EMR in your environment or in the folks you support environments to make it usable and to be to implement it and achieve the outcomes that you're looking for?

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I'll speak to that from the subspecialty stand-point. We have much more leverage when we talk to 112 orthopedists in Atlanta that have the same EMR that we do, the same group in OrthoCarolina with 120 or so. So, now we have 300 people asking our vendor for the same product. I think that gives us a chance. So, let's not always pass it off on the vendor. Those of us who use these products every day have to accept some of the responsibility for designing our own workflows and what makes them run a little better and that's been our most recent approach.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

I'm really glad you asked that question because, as I talked in my saying is we're on the ASP which means we have no customization. Our vendor does all of it and initially it was frustrating but what we found was reiterations and things this is by far and away a better way to go. Because to be honest we recognize we don't always understand what's best and as we see new things pushed out to us we say "man these really work."

So, in this application service provider we found that to be a Godsend for two reasons, one we just tell our doctors it's not possible, you know, we're going to take the best that they have and we're going to make it work for us and the second thing is we've shown that that's actually improved our efficiencies and they've been able to give us stuff that we didn't even know we needed or wanted. So, from a stand-point of a small practice the ASP has been really a Godsend.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

So, we're just the opposite, we're – same vendor but a heavily customized 20, you know, two decades into our journey with this vendor and we still heavily customize. So, I think the big struggle that we also have that I wrote down in my notes during the first session is that even if the usability is crappy you habituate to that and so we have now a group of people that have habituated to this very difficult way of doing things and so now as our vendor – which I think our vendor probably in the good, I would think in the excellent category of those user centered categories, but as they do that work there's two problems. One, it doesn't retrofit to the old legacy system so that's one.

But two, even where they've taken old workflow and replaced it with a new user centered good workflow our habituated users struggle to even listen to that workflow because as long as the old one is there they're going to do it. So, customization has been really tricky. I don't know if that answers the question.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

And I can also answer for some of the smaller practices with which we work they don't have the bandwidth to do any customization so they pretty much take it the way it is. And from my previous implementations at a large integrated delivery system where we had one product that we'd roll out, each clinic physically can be created, laid out somewhat differently so there does need to be customization of the potential local workflow based upon the product so that's where some of the customization from our experience needs to be done. But to improve the product itself I think as a basic it would be most important for those places that do not have the bandwidth to do be able to do their own customization of a product.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

The one thing I should say as I said in our hospital they're very customized and they're a big system so they can do that and we're on spring of 2010. So, we're operating on three -year-old software which I think is terrible, okay. In our ASP environment we're working on June of 2013, huge difference we have much more capabilities and were not fighting.

Now what it does means and I'll be honest with you is we have it – you know, sometimes what we call scary Friday is because the vendor, you know, on Thursday night pushes out a new version and we're not always sure how well it's going to work. But, as I said when it comes to meeting Meaningful Use and it comes to actually doing the metrics and measuring and what's going on I much prefer the system we have in the clinic that's on June of 2013 then the hospital which is on spring of 2010.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

That's definitely a measurable component of certification that your clients are at a certain level of current – some percentage of clients should be at a certain level of using current functionality.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Thank you.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Okay. Amy? And I should point out we've got about 15 minutes and we've got several cards up so we need to start to focus out guys, thanks.

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

So, I want to pick up on something, I think it was John that talked about, around sort of the clipboard and then Paul talked about, you know, multiple portals for patients. So, how – is there a way that you envision actually trying – it seems to me that it be would be a win for both patients and providers if patients didn't have to fill out, you know, intake forms every time they go to an office and offices didn't have to input or hospital didn't have to input this data all the time. But we know personal health records really haven't, you know, gotten a lot of traction and there are a lot of different portals.

Do you have ideas or suggestions on how to implement in a way – you know, so that there is – whether it's a common data set of intake information, obviously some specialties require different information as well but how would you envision trying to actually move that along to the point where we would be in a world where we fill out information once and it gets to all the providers we need, because it seems to me that that would drive both from a patient and a provider real value in usability.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

Our current portal as it is being created allows the creation of the data set that's used by all the physicians in the group and then subspecialists can add forms for the patient to fill out that are e-mailed to them prior to their first visit. So, you can meet the little tiny sub-specialization piece for the OB/GYN with a smaller form, but there's got to be that emergency contact name, ethnicity and so forth, smoking history, there has to be a data set out there that no one has really defined yet that I'm aware of that can then be shared through some universal standard.

I think I have my data on three or four different ones now and nobody can ever use any of them so I always have to fill the clipboard out again. Within one institution one of our employees the other day took her son to the Medical College down in Richmond and she filled the same forms out in four different departments during her visit there all within the same institution that's a problem.

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

Yeah, I guess I was looking to see if there were any recommendations. So, I mean, it's bad enough if you're doing it within one organization and that might be easier to solve but across organizations whether – you know, I mean, part of this is as much – even if there was a regional or local HIE where patients could put in their information, the ability then to be able to import it into or share it from EHR to EHR, it just seems like this has really been – you know, that we really don't have still a model for how we might be able to implement this to move this along.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I think there has been some work on the part of our portal manufacturer and taking the clinical care document that's the small condensed version of a patient visit and making some of that data importable to populate fields in the demographic dataset within our EMR, you know, whether that's going to be successful or not I do not know but we're starting to try some things with user groups and all, maybe we can share best practices and come up with something better.

Christopher H. Tashjian, MD, FAFAP – River Falls Medical Clinics

I think the key is a standard. Again, it's kind of – really an anti-customization kind of theme is that if you put out the standard and everybody can use that standard then I think – then it becomes much more interoperable.

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

Thank you.

Paul Kleeberg, MD, FAFAP, FHIMSS – Chief Medical Information Officer – Stratis Health

I also believe that the C-CDA defines a lot of elements that could potentially be shared. So, I think one of the boundaries right now is the ease of exchange and a way to absolutely positively identify a patient and I know the patient identifier is a – we can't touch that now because of some congressional thing that happened a few years ago, but if it were like with your ATM card, if you're able to put it in and get the basic information that's in a C-CDA and take only the elements that you want to have then you can print that out to the patient – or have it on an iPad and they can verify or change it when they come and not have to reenter data.

So, you have two challenges, one is actually making the exchange work well and the second is to have a positive way to identify a patient that walks in the door so and that's something that actually I'm a part of HIMSS and we've been advocating for congress to look at ways that we can actually begin to do that.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

I think there's a third piece really quickly to the ATM analogy which is the one we all like and that is someone owns the source – someone is the source of truth. In the ATM I have a bank, it is my bank, so defining the document is not enough if there's 20 different sources of truth that are trying to feed the document.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

Good point.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Great. Michael?

Michael H. Zaroukian, MD, PhD, FACP, FHIMSS – Vice President & Chief Medical Officer – Sparrow Health System

Thank you, so this information exchange is a good segue to what my question – I think it was John who had mentioned that despite having three major EHR vendors in the community there was either relatively little enthusiasm or ability or perhaps both to exchange data. I guess I'd be interested in your take but also from the group with regards to how much of that you see to be on the vendor end of willingness to exchange, how much is on organizational and the potential competing interests of that and how much might even be on the provider?

And as a primary care physician I on the one hand would love to get the facts I can't get now and I also know what my fellow physicians do with the facts and that is they put it into the record and they often don't end up reconciling the medications and the problems and all of those other things because it's a piece of paper that's too many pages.

On the other hand I see, since I share one of the vendors here, when there is vendor to vendor intraoperability there is very robust ability to have important data land at your doorstep in your EHR and decide whether you want to incorporate that into your record, which I think is a model for one highly usable approach to getting information between sources. So, I'm interested in the group's perspective on what it would take to do that well both from the political, local, regional and vendor versus organization perspectives.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

Richmond has a regional HIE known as MedVirginia and that's helping develop the state CONNECT Care HIE, CONNECT Virginia HIE and the three institutions I think, in Richmond, I think do defend their proprietary interests of their data and so far only one chain has signed onto that means of exchanging data. So, yes, there is some resistance to that.

We have, as a group, worked out a direct feed from EPIC into our EMR but I apologize to those working with rural doctors, they will do that for group of 42 orthopedists in hopes of gaining market share, so we have an advantage but a lot of smaller groups do not have that advantage so they're still out in the cold and don't get that data sharing. So perhaps we need to incentivize data sharing to smaller groups more than you do to the larger groups.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

You know, Mike, you asked who maybe the potential causes. I know going back to our experience again when we were building and sharing across our EPIC customers all of the doctors were very willing to want to share and so the clinical people want that information so that's not a boundary.

I think right now, again, one of the boundaries is that it's still easier to press a number on a fax machine than it is for me to be able to figure out how I can send this data and there is some desire, again, from large systems to not want to share a lot of proprietary information but I see no boundaries for them not wanting to share patient specific information especially as we move into ACOs because if I do a better job managing those patients they may potentially save some dollars as well and not get readmissions. So, I think from a patient level it can be important.

The boundary that I see right now is potentially with vendor lock and I think we can create standards to make that – and expectations to make that exchange a lot easier. Also, as an aside on that point of vendor lock, I think as our standards evolve and we are able to switch platforms like we can switch cars, I think we'll see a great progress in terms of usability and improvements in EHR systems, that's an aside that I wanted to plug.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

We did not have a barrier when we got physicians in the room, we're not that big of a community but we have half a million lives basically in one system and half a million in another, two big extremely competitive systems, hospital systems and so this summer we're plugged into our local HIE that we built. I think we had to have physicians in the room to shout down the financial interests or the political interests of the local environment but, so we didn't have a local barrier exactly. I still think that we're going to end up sharing that data and then it's not going to be portable in the way it could be if there was a, you know, a central source.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

You know, my only response is that what we've seen it is the vendors, is that the clinicians all want to share the data; we really have nothing to hide. I even see the systems wanting to share, but I think the vendors are worried if the data becomes too portable then you're not tied to them and you can switch vendors. What we can do to, you know, to help or to resolve that is, you know, I'm not sure but that's where I really see the problem is.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Thank you. Well, let me cycle back here. Marc?

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay and I will make this quick, it's amazing how many of these conversations come back to standards and data exchange. So, I subscribe or my experience suggests that a user can take a really good system and when it's implemented make it fail or a user can take a really mediocre system that they really like and make it succeed. So, with that, I'm going to ask you a really unfair question, but we can do it fast if we go this way. In your minds, between the vendor and the purchaser of that system, how much of the responsibility, so like 50/50 or 70/30 lies within the vendor for usability and how much lies within the responsibility of the purchaser of that system?

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I'm a believer it's 50/50.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

It's a joint partnership.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

I would say 90/10 with the vendors holding the 90.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

I'm going to say leadership at the local facility, because you can make junk work if you've got good leadership to push the process.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

So, your number?

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

I'd 80 percent leadership.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I'm not sure of the percentages; I'd like to see the vendor do a much better job at education and optimization that's all falling to the provider now. So, when we learn to use the system I think it's probably 70 percent our effort and 30 percent some very mediocre educational material that the vendors supplies.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, thanks, appreciate that.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Wes?

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

Thanks, I've been interested in the number of times we've compared interoperability to fax machines. I had a colleague who actually started a presentation by getting a fax machine on a podium and a sledgehammer and doing the redheaded comedian thing except the splinters were a little tougher than watermelon seeds.

I wrote a blog trying to analyze what you could do to match the fax machine a few years ago and that was kind of at the earlier stages of Direct. We keep hearing that words to the effect that Direct won't work unless there is a national directory of providers and there Direct addresses and yet we have a pretty extensive e-mail system in the world without such a directory and the people who try to compile such directories are generally thought of as somehow invading our privacy selling direct marketing lists and so forth.

We have no directory of fax numbers and yet faxes are what we rely on. Does anybody on the panel really think that this directory of Direct numbers, even if you can say it fast three times, is that critical to Direct replacing the fax as a – maybe we need an e-mail with nine pushbuttons on it like our fax machine but that's software, right? So, your comments on that please?

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

I can only reiterate I think it's critical. I know you're saying that I want to take the hammer to my fax machine because it is a giant pain to me the rear to me and it creates an enormous amount of work. If I can have access to somebody's e-mail box like I would their fax machine and I'm not interested in sharing it with anybody else. I don't care what you do with it, you can cut out all the marketing and all the other stuff but the other thing is it has to be secure and we have enormous e-mail but they're not secure so I can't send patient information on my e-mail, it has to be secure.

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

Go ahead.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

The answer I think isn't completely simple. I don't think we have to have a directory just like we don't have a directory of faxes and I would be concerned if we do have a directory that we'd begin to get spam into it.

I think my knowing the Direct addresses of those folks to whom I refer and from whom I refer would be appropriate. And then if I have to send someone to a location that I don't know their place, if there is a triage person that can appropriately move it to the right provider I think that would work.

So, I don't think the directory is a requirement but I do like the idea of having everyone having an address. The problem with e-mail though as opposed to fax, fax is a piece of paper that shows up and you see that there is something. It's not as easy to do that if it's coming into your personal e-mail box and it's not in your workflow.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

The system that MedVirginia worked out for our office actually avoids the in mail box altogether, it identifies the patient by name, three parameters, birth date and social security number and it actually shows up in my patient's EMR chart in my office and then we have a workflow, you just have to verify that the parameters match and the documents do not come until the physician has signed them in the hospital so that makes that the final document. You don't want, for legal reasons, a document you edited in hospital and a document you edited when it got to your office in the same chart that makes all kind of problems.

So, the workflow now, as compared to using faxes is just so tremendously easy. There is no paperwork to handle, the secretary doesn't have to sit down and look up the patient's chart from what's on the fax it's already in the right chart.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

But that only works if they have a Direct e-mail.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

Pardon me?

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

That only works if you have a Direct e-mail where you can have those user fields that you can line up.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

Yeah, it's not done through the e-mail system though it's done through the interface that was generated for a large group to solicit our business.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

You're asking a million dollar question. I mean, what trumps, you know, familiar, reliable and easy, and you know is a directory enough to trump those things and I don't know if it is.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Okay, we're down to just a couple of minutes. So, David, I think you'll wrap it up for us.

David Kates – Senior Vice President, Clinical Strategy – NaviNet

Okay, thanks and thanks to the panelists. Following on Marc's lead of sort of a precise answer on a topic that you all had indicated was a challenge for you, on quality reporting, I was trying to get a little bit of clarification from your stand-point of whether the challenges of submitting the various quality reports for Meaningful Use, for commercial and for public payers is it a challenge relating to the variability or the different measures that each of those organizations requires, number one?

Number two, is it that the information that you need to gather to be able to submit those required reports is extraneous to what you have in the EMR or is it just the mechanics of submitting those reports electronically?

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

Yes.

David Kates – Senior Vice President, Clinical Strategy – NaviNet

Can you prioritize those if you had to?

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

I don't even know how to prioritize them, they're all problems. I think the first one, the varying standards though the varying reports you have to define a different report and the differences are often trivial between what a third-party payer wants and what PQRS wants, and what Meaningful Use wants. So, there is no real reason for them to use different standards it's just a hassle. So, I would put that one first, but it's all an issue.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

I would put the different standards as probably the most important. For example, if you're doing diabetes some people want five things, some people want different things, they want aspirin or they want did you see the ophthalmologist or what their urine microalbumin is and the nice part would be, you know, maybe it's just you do all 7 and then that covers everybody, but it would be nice to have a standard that says this is how we're treating our patients and this is how well we're doing.

Paul Kleeberg, MD, FAAFP, FHIMSS – Chief Medical Information Officer – Stratis Health

The variability and quality reporting is important and probably the most important. In our state where we have been doing quality reporting for a long time we've developed them even further so to reduce them down or dumb them down we have some resistance within our state to do that. But the other thing that we've found a lot of our providers, the quality reports and for hospitals too, have not been accurate and to go through the hoops to make them accurate so they actually reflect what you're doing has been a challenge. So, there has been dissatisfaction on the provider part as a result of that.

Craig Bradley, MD – Chief Medical Information Officer – Texas Tech University, HSC School of Medicine

We have another – sorry, we have another issue that I just will bring up briefly. As we're an academic institution and it's very difficult for us to know who owns which patient.

John David Bowman, MD – Chief Medical Officer – OrthoVirginia

I'm just beginning to get into some of the quality data. One hospital chain is using premier, one is using crimson and these are fairly new tools for our area, but I've seen demonstrations that show how powerful they can be.

The thing that concerns me most is physicians will criticize the data and yet they are the ones who aren't doing appropriate coding, they aren't documenting the CMI well enough and then their mortality looks relatively high. So, they want to throw the whole system out because they're not doing their job.

So, there's a lot of work for everyone to do getting knowledgeable with the systems, using ICD-10 properly, getting cased mix index where it needs to be so that you're comparing like patients to like patients and once we get all of that done then I think we really will have some valid data coming out of those new things, but that's all fairly new yet for the average practitioner.

Christopher H. Tashjian, MD, FAAFP – River Falls Medical Clinics

I hate to admit this but Paul's right Minnesota community measurement has been doing this for a while, you know, and for Wisconsin to give Minnesota kudos is really hard, but the point is they have some really good data and some really good experience and they may be a good resource to use when looking at quality reporting because they've been doing it for a while and it's been public and I think there is more buy in than you think. I think the physician community has gotten used to it.

David Kates – Senior Vice President, Clinical Strategy – NaviNet

Thank you.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So, thank you to everybody. We're just about on time.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So, thank you panel, this was terrific. What I will tell you from a – we'll clap first, clap first.

[Applause]

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

We are not going to take a break to stay on time. So, I know our eligible hospital folks will be right up here and I know that they will be as entertaining in their candid remarks as the EPs were, great job for all of you.

M

Some of the committee members –

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So, who the hell –

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

We don't do this in the Policy Committee.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Oh, yeah, right.

Anne Castro – Vice President, Chief Design Architect – BlueCross BlueShield of South Carolina
– I'll go later.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

I'm staying.

M

I may go.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Go for it. And Marc –

[Multiple voices]

Michelle Consolazio – Office of the National Coordinator

If everyone could take their seats, we're going to get started. Please take your seats so we can get started, we're running a little behind, thank you.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

If everybody – could I – if everybody will please return to your seats our non-break is over.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

That's the warning.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Yeah, exactly, turn it into a non-lunch.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So our next panel are the eligible hospital representatives and we do have one virtual speaker and we'd like to go to Tom first. I want to remind everybody that we have bios on you so please identify yourselves and what organization you come from, but beyond that we'll rely on the bios. We will have a clock that indicates your five-minute time period and as you can see from the previous two panels there will be on difficulty in filling our time with questions and we're really looking forward to your input. So, Tom if you are with us and you can begin that would be terrific.

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

Yes, thank you, good morning everybody. I want to just say I'm with HCA Healthcare and I'm a Division Chief Information Officer for Capital Division which is one of the 15 HCA Divisions in the United States and I apologize for not being there in person but due to the last-minute notification I wasn't able to make it and also having not gone through this before I'll apologize in advance for not having all the answers to the questions, because, again I didn't have a lot of time to respond but I'm happy to provide the feedback that I can. And would you like me to step through the questions, is that how we start this or another preference?

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

That would be great Tom and I don't know can you see the clock, are you online? He cannot see it, so Michelle, why don't we give him a 1 minute warning. Okay, great.

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

Yes, that would be helpful, thank you. So, yeah I will answer some of these questions and then like I said I wasn't able to answer all of them, but we're currently really focused on Stage 2 at our division because within HCA we are looking at moving approximately 46 hospitals through the Stage 2 process at the moment and I'm focused on eight of those facilities within our division and, you know, some of the feedback basically around the resources that are required to implement these projects for Stage 2 specifically really come down to the disruption factor, I guess I would call it that.

One of the biggest challenges for a person in my seat, and I've done this job for 16 years across four different healthcare systems, is implementing the technology without affecting or disrupting the clinical workflow process. So, we obviously look as a corporation, whether it's here at HCA or where I've been at other facilities, we try to look at lessons learned through either Stage 1 or other implementations of Health IT Projects and try to limit the disruption on the providers, ancillary departments and so on and so forth.

And one of the most significant obvious benefits of Meaningful Use is that we get wonderful data out of the system that we put in place, but we also in doing so, change the workflow process. And in order to really adapt the work technology to the workflow process without negatively impacting it, we call upon a lot of clinical stakeholders and it really does affect the bedside process because we need nurses, although we have nurses in the information technology department, we obviously need additional nursing staff and other ancillary staff to be super users because essentially as you put the technology in place there's a lot of training required for the physician and providers and a lot of that comes from the nursing staff and a lot of that support is provided by the super users.

And in today's world of already having a nursing shortage and shortages in other clinical space, it's very challenging to take those folks basically out of the clinical delivery process and put them into a project role for some number of months, almost the better part of a year in our case, and then backfill that spot obviously because you don't want to compromise your quality metrics, core measures and what have you by moving a clinician out of the service to implement a project you still need to keep the patient care standard high. Now you can do that obviously through traveling nurses and so on but as we know that does not always, in every case, deliver the same level of quality because those nurses don't have the familiarity with the process or the department, or the hospital nor do they have the institutional knowledge at times.

So, as an IT professional we have approximately 225 folks in my division across four states so we really pay attention and work very closely with our CMIOs and executive leadership to ensure that that clinical, at the elbow, support is available as we implement. So, those are I think probably the – well not the only challenges and areas we focus in on, one of the key areas.

We also, you know, from a design stand-point obviously want to get it right the first time so we spend a lot of time in testing to achieve the Stage 2 requirements and we invest a lot of time on the front end to make that happen.

Michelle Consolazio – Office of the National Coordinator

Tom, you have one minute.

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

Thank you and that involves a lot of travel, that involves a lot of face time. We do as much videoconferencing as we can but at the end of the day we really have to have face-to-face feedback and the way we do that is through physician advisory groups.

So, as we pull in the design and some of the lighter lifts around demographics, vitals, smoking status, things like advance directives and lab results, you know, it's a little easier to get feedback in those areas so when you come into the heavier lifting areas like CPOE, patient portals, summary of care records, eMAR, medication reconciliation, some of the more complex, if you will, areas of Stage 2 those are heavy lifts and you really do need face time with your providers and you have to pay them for that time.

So, you know, in a nutshell we think it's the right thing to do. We obviously support the initiatives and feel very strongly as a company to meet them. We were very successful in Stage 1. We feel we are going to be very successful in Stage 2, but we want to do it the right way with the least amount of –

Michelle Consolazio – Office of the National Coordinator

Tom your time is up.

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

To the bedside, thank you.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you Tom and we'll be back I'm sure with questions. Pam?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Yes, good afternoon or morning. I'm Pam McNutt I'm the Chief Information Officer at Methodist Health System in Dallas and I'm going to address some of the questions here. First is the question about assessing readiness for Stage 2 and what's giving our organization angst.

The big challenges we see are the issue of patients actually accessing their records and the patient portal being accountable for that. We also have concern about data exchange at transition of care. We are part of the HIE but I think there's more to it than just being a part of an HIE and that's concerning.

Fully automated medication reconciliation for 100 percent of our patients is a challenge for us. I know it doesn't require 100 percent but I'm concerned about putting out a continuity of care document on any patient who hasn't had a fully reconciled medication list. Creating completely accurate quality exchange metric data directly from the EMR remains a significant challenge due to the lack of some of the data elements in there.

Summary of care electronically exchanged 10 percent of the time. Again, the HIE issue. The biggest issue though is that we just don't have enough time to implement and exercise our certified 2014 software. We were an early adopter of our vendor certified 2014 release yet we just upgraded last week. We are still scheduled to take delivery of the patient portal next month.

Since each vendor's approach to how the measures work – you have to really exercise your upgraded software to see how your vendor has implemented that particular measure. We know there will be many workflow and screen changes that are going to be needed that will yield heavy training and educational needs for our staff as we discover how our software is going to actually comply with Stage 2.

What's our approach to this? Quite frankly, we're very concerned not really very optimistic that we are going to be able to meet Meaningful Use Stage 2 by July 1st of next year, in other words, be completely prepared ready to demonstrate 100 percent compliance by July 1st of next year without a great deal of unintended consequences in our organization.

All of the objectives that I've already talked about require significant work, we've talked about that. An example is about this patient portal. To give you an example of what we have to go through, the patient portal, once we install it we've got to map all of our data to it and then have folks from all the clinical areas validate that that data has been mapped appropriately and is displaying appropriately.

Furthermore, we're going to have to look at what is our timing, how quickly can we deliver the data to the portal to make it useful for the patient and the requirement that some of the data be delivered pretty quickly concerns me because we may sacrifice quality for speed in getting the data in front of the patient or accuracy and so that's a concern.

And of course legal is going to have to get involved and write all the disclaimers and everything that the patient will have to click through in order to access this portal. We'll have to stand up helpdesks to support patients and figure out how to get patients enrolled. So, we have all this work to do by July 1st and you can see why that feels a little onerous at this point.

So, based on the timing issues and us being an early adopter our recommendation would be that Stage 2 start in 2013 for those that are ready but providers that need additional timeline for compliance well beyond September 30, 2014 due to the short timeframes, and the timeframes in which the providers are able to receive their certified upgrades, those long queues still for people to be able to get that accomplished. So, we're very – would recommend that these committees take very seriously the recommendations that are being proposed by CHIME, the College of Healthcare Information Management Executives, and the American Hospital Association and others that are bringing this point forward.

Resources that would be – jumping down to question four, which is resources that I believe would be important and useful. Based on where we were – when I look back at where we were with 2011 Meaningful Use at about this same timeframe getting ready for compliance there was a much deeper understanding in the industry of the specifics and a lot of debate going on, what do they mean by this, what do they mean by that, I don't feel that happening right now so I feel that there is a need for more education in the industry, perhaps more webinars, in face meetings that type of thing. So, those would be my top items to tell you about.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, thank you, Pam. Rod?

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

Certainly, number one, thank you for the opportunity to be here and I actually thank you for having the human factors presentation by Terry and Raj earlier because I think it frames a lot of the comments that you've heard and will continue to hear. So, I am Rod Dykehouse, CIO at Penn State Hershey Medical Center and College of Medicine, I've been there almost a year and just to frame that we're an academic medical center with a children's hospital but we're also a 900 physician medical group in the area.

So, we have a single EMR across that enterprise and to frame kind of the challenge that we have, we're still deploying our EMR into some of the subspecialty clinics across our environment in the locations of care clinics and so forth. So, we have to measure both those that we've already certified under Stage 1 and under the original and now the new and I think that was a challenge that was identified for us and by the vendor.

I think that the vendor is doing a great job trying to keep up but you'll hear some of the same issues of the time required to make it happen. Clearly the human factors discussion was around adoption and use and if these things are embedded in the clinical workflow and they're a subset or a byproduct of the care and delivery to deliver safe and quality care that's great. When it becomes the sole focus of tracking and reporting for Meaningful Use we view that as not necessarily a good thing.

What I share with my IT leadership team is a simple mantra, standardize, simplify and optimize. If we're optimizing what we're trying to accomplish we can do that much more readily if we standardize and simplify that and you'll hear in my comments and from others the need for standards and the need for less complexity and more simplicity to be able to do that. So, that's key.

As Pam and others have talked about, it's about time, time to do it well, to make it happen in that regard and the clarity to spend less time to try to figure out the regulations and what they mean, but actually to design, build it and then from the provider's stand-point to implement it in the workflow we have.

And my final point that I want to make before I touch on some of specifics is around the adage go to where the puck is going to be. If you know we're going down a path away from fee-for-service to population management and other things I would encourage you to consider Stage 3 and those things to move us in that direction. The more we embed ourselves in the current world the more difficult it is for us to move forward through the resistance to make it happen.

So, specific responses to question one objectives, which objectives pose the greatest challenge? Again, embedded in my comments is around the lack of data standards and provider patient identification, help us with that. If you help us we can optimize, we can move forward and spend less time in logistics to make it happen.

Our approach is pretty simple, we are – unlike Marc at Intermountain, we don't build our system. We are entirely dependent upon the vendor and they need the time to build it, design it and then give it to us and one of the things that is very critical is the workflow. They have to design workflow into their system that in some cases we have to then look at, determine is not working in our current world, customize it, request a customization or change it. So, if it's a better workflow we're not objecting to that but the issue is it should come as a byproduct and make it happen in that regard.

So, number two, national or actions most conducive to increase adoption of public health standards. National standards again, in Pennsylvania the HIE actually proposed new Regs or different requirements that the vendor refused. The vendor can't provide 50 different versions any more than 10 or 20. So, again, I think we're all chasing the same thing in that regard.

I already commented in terms of question three for Stage 3. Population management and patient engagement, if those things are important to where we're going than that's where I would propose and recommend the Stage 3 issues move us to, to help us in that regard.

Again, the reason – number four, resources from CMS and ONC, time, again time to make it happen, to build it, design it, do it well and then information clarity so we don't waste time in terms of trying to figure that out in terms of moving forward.

Question number five in terms of effective use of HIT to enable consumers to be active participants in their own healthcare. Truly the patient portal where there is a long-term relationship with the primary care provider, absolutely there's value there but I would suggest that eVisit reimbursement to encourage physician use of those things would go a long way.

And I do encourage you on page three of my comments to read the comment that I took directly from a physician who spoke to CCD and medical record information, was intended to communicate between medical providers not patients. In the case of bulimic and anorexia nervosa and other patients that can be very negative and detrimental to the care of the patient, I defer to my physician colleagues in that regard but I think it's something we have to keep in mind as we move forward.

And the last point or last question in terms of transitions of care, no we don't do that today we're looking at products to make it happen. Again, lack of standards, identification and complexity of data. The example of how many different types of smoking status is very complex when you're asking medical office providers and others to answer questions. So, garbage data will be of no value if it's too complex keep that in mind as you move forward as well.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, thank you Rod. Randy?

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

Good morning and thank you for having me here and kudos to all of us for what we're doing to advance health information technology in this country. First of all I want to talk a little bit about St. Claire in Northeastern Kentucky, some things that you don't see in the printed materials that you have. St. Claire's is a standalone Catholic Hospital, which to me kind of represents a lot of the healthcare and the hospitals in rural America. So, we're not going to be a lot different than them. We are a teaching facility. We teach rural physicians as an arm of the University of Kentucky College of Medicine. We are also very active in participating in all of the regional extension centers, the regional health information organization that goes on in Northeastern Kentucky.

We are dealing with a lot of the things that especially those folks in rural America are dealing with and that is the digital natives versus the digital immigrants and those of us that are my age are those digital immigrants trying to learn how to use a lot of these things.

And from the rural stand-point we deal with a lot of razor thin margins especially those of us that are independent hospitals and we also employ essentially all of our physicians because the physicians have come to us over the past 10 years and said we don't want to do all of this work that's associated with trying to keep up with all the regulations and everything so we want you to employ us and we will work for you. So, the only groups that we don't employ are our ED physicians. So, very limited number that we don't.

From the stand-point of the reimbursement that is changing, we have been going through that and in order to meet the bottom line where we want a zero bottom line or better, we've had to reduce the number of people that work for us and we've done a 5 percent reduction over the past year and our board is telling us you have to do another 5 percent reduction within the next year. That kind of plays into all the things and the questions that I'm going to answer here in just a moment.

In response to the first question where we're talking about the Stage 2 objectives, that's some of the biggest issues, just what I'm talking about the dollars that we've got available to buy the things that we have to have in order to meet Meaningful Use with those razor thin margins being able to buy those interfaces to get to the public health interfaces that we have to have, that costs money that we really have to prioritize and we're three years into getting the systems in place that we have to have for Meaningful Use and the systems that are there, the radiology equipment, the lab equipment has taken a backseat now for three years and it's getting to the point that we're going to have to start paying attention to those things.

The second part is a patient portal and were dealing with people that don't know how to use computers much less even having a computer in the poverty area that we serve. Also, being able to buy that patient portal and especially a patient portal that will front end for multiple systems, the third area is quality measures being able to get all the quality measures taken care of that we have to, it's a huge issue.

The next one is what can HHS do for increased adoption? Public health, again being able to do what we have to do for the public health and being able to do the reporting that we have to do for public health and the interfaces that we have to put into place there.

And the second one that I would come up with is patient matching, we don't refer a lot of patients out but when we do it is issue of patient matching, because just in our own small facility in our area we have two folks that are named exactly the same thing and, you know, that's kind of unique for us.

On the third one where we're talking about Stage 3 we're not even at the point that we're thinking much yet about Stage 3 because we just did Stage 1 year 1 two and a half months ago.

So, being able to adopt standards for treatment of consent, I'm sorry, treatment and consent, those are two areas that we're really concerned about. Patient matching and being able to make sure that we're taking care of the same patient in all of our different facilities, because we have a different system in our family medicine/primary care than we have in the hospital so that's an issue.

What have we found most effective when it comes to being able to enable consumers? We do have numerous people that have taken the time to look online on the Internet to be able to come up with what is their problem and how do they try to deal with it, yet they're not ready to start taking care of themselves. They just bring those issues to their physicians. The patient portal, we love the idea but trying to get there for the population that we serve is going to be a huge issue.

The next one talking about important barriers, one of the biggest issues that we see is the culture. We have some physicians, and this translates over to the patient as well, that just can't get past that point of using a computer to take care of a patient. As we've implemented CPOE, we've been live on it for 6 months, we have had huge issues with some of those physicians being able to use a computer to take care of that data rather than writing it down.

On the other one where we're talking about being able to sharing data, yes we share data there is a state health information exchange and we have been submitting data to that health information exchange since the beginning of 2012 and we find it very valuable especially for those patients that show up in our ER. Thank you.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you very much, great testimony. I think, you know, it's a challenging world that we live in and I think you've pointed out that you want to make this happen, that you were all on the same page in terms of wanting quality for our patients and better data, I heard that consistently and that you're struggling with some of the requirements, the portal requirement, the exchange of data and certainly patient matching, and just the pure timing issue.

So, you know, Pam, you gave a suggestion that you might want to clarify further – I mean, when we think about how we're going – you know, as Paul's Workgroup starts to formulate Stage 2, 3 excuse me, and you're talking about kind of changing a timeline for Stage 2 is there – can you offer some detail and then I would encourage others to ask questions and I have another question that Dave Muntz, our Chief Deputy, would like to ask and it's kind of a confusing question so I'll ask it toward the end when we can concentrate on it. And I'll get him to help me of course. Pam?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Oh, about the timeline?

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

The timing, yeah, I'm a little confused.

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Well, the thought on that would be, you know, since folks have made efforts to be ready there are some that are ready and are moving forward and can I wouldn't say delay Stage 2 necessarily, but let those that are ready begin – but just give an extended timeline, you know, on the back end to be able to meet and there's a proposal that's been put together by CHIME that does show how that could fit in without disrupting the start of the next Stage 2 terribly, but it does give a little more time beyond July 1st it would allow us to have another I think of nine months, a quarter, some more quarters that we could try and hit throughout the year to meet Stage 2. Then of course we'd have to rapidly turn around and demonstrate for the second year as well in order to be prepared for Stage 3 but that would – might be a way to give us some relief from this time crunch that we're in right now.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Okay, thank you, Pam. Marc?

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Two questions, one just to confirm something that I heard from – I think I heard from all of you, make sure I heard right, was that it wasn't so much any of the specific things that you're doing that were impossible but the stack is very tall and to do it right and avoid the unintended consequences takes time. So, I think everybody's nodding heads I think in general to that. So, I heard that right.

The second thing I didn't hear anybody mention, perhaps because the stack is so tall and it's hard to sort of look beyond that, but I'd be curious to hear your comments on, is one of the things that commonly comes up when you talk to clinicians about the usability and the implementation challenges is the time it takes to do documentation online and yet nobody mentioned that. So, I'm kind of curious is that an issue and if not how come not when that seems to be the thing most physicians and nurses, and therapists that I talked to bring up? Anyone can answer.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Go ahead. Pam you want to take it or Rod? Okay.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

Yeah, so I think it is everything we do and in my comment in terms of usability and the human factors issue is absolutely critical. When they're going through their normal historical workflow and we can embed the systems around that and they don't have to change it's easy to be done, but every time we introduce a new element or a new requirement to them we have to figure out is it the clinician, the physician is the right place or not, how do we make it happen and still make it work for the patient and for the caregiver.

Our vendor is working very diligently in terms of speed and performance on the system. There's lots of challenges we have as we rollout to the specialist. What works for a primary care does not work for a specialist or a subspecialist and we have to make certain that all works.

And when we have new CCD requirements and communication to the patient that is generic and specific for all it's a challenge because the physicians don't see the need to collect the vitals if they're a subspecialist in that regard and so it falls to us as a provider of the system to be able to make it effective for their use and purpose and that was my comment in terms of some of the workflow changes that we have.

We have very specific workflow embedded in our depart process from our clinics that is now potentially going to be completely changed by the vendor out of necessity to meet the new needs and we have to figure out how do we collect that information in an appropriate manner, in an appropriate timeframe and we have to go out and touch literally thousands of users to retrain them in terms of the new way of making it happen in a very defined short timeframe.

And so we just kind of step back and say how do we do this? So, ignoring the human factors and the workflow issue is very challenging, very problematic and is something that is a challenge in front of us.

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Liz, can I make a point of how this leads into the difficulty with the quality metrics, because that's where I see the overlap? For our physicians they're actually clamoring to be able to do their progress notes as we're rolling out CPOE. They're pushing us almost faster than we want to go. But what they mean by that is they want to do a more or less free-form. I mean, you can put some structure in it, what they don't want to do is click all the boxes to help us determine all the exceptions that go into the quality metrics and what I mean by that is you look at some of them like VT and if it's just we could calculate the quality metrics if it was as simple as looking at these diagnoses codes and these kind of labs or these kind of drugs were dispensed, but then you have all those exceptions and the place those exceptions come from right now are being abstracted out of physical and histories and surgical op reports and so what we're asking the physicians to do on top of doing their regular work is to be the documenters of those exclusions and as my doctors put it, I don't want a bunch of clicky boxes I have to click just so quality doesn't have to – can get a jump on reading through the chart.

And so that's where we're getting the pushback is things that feel like it might be somebody else's work or I've already said that and until the day we do completely automated physical and histories, and everything in a hospital setting I think we're going to continue to get that resistance thus making the quality metrics imperfect when captured electronically like that.

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

So, to comment to Marc on your first point there, one of the things that I've heard from a few of our doctors is the number of things that we're trying to do and to change the way they're working that their concerned that it's hindering their ability to take care of the patients with quality care, it's a concern to them that they're expressing.

On the second point, the technology is there, I mean, the technology is there for us to do this. It goes back to the first thing we talked about are we trying to do too much too fast and that's what we're talking about the stack that is very tall.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, thank you. Larry?

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So, thank you for all the comments. So, I have a personal organizational vested interest in this question I'll fess up to that right up front and we heard the EPs talk about the issue of sending electronic care summaries with patients but we didn't hear much of that from you guys on the hospital side. So, I'm wondering the silence meaning you already told me it was hard from something else you said or you're already doing it or where are you?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

I think that's very problematic and it just didn't make the absolute top of the list. But, yes, I think we are going to struggle with that and, you know, some areas have HIEs that might be able to facilitate it but it's unclear whether or not if you just get the record to an HIE and a doctor could pick it up is that okay or do you apparently have to ensure that the doctor does in fact pick it up if you use an HIE, so then maybe you drop back and say I need to look at Direct and it just seems counterproductive if we really want to push HIEs forward.

And I too am very concerned about patients and personal health records. I think patients in the long run want a personal health record, they just don't know it by that name yet, they don't know it by that name, but when we start presenting them 10 patient portals from all these different specialties and hospitals they're going to say, well, I'm not going to deal with all this, someone just tell me in one place where my records are and I would suggest then for Stage 3 that we focus more on how we can get that patient engagement not on a provider/provider basis as far as electronics go, yes, the relationship, you know, for the delivery of medicine needs to be personal, but we need to find a way to try and drive that more out to the HIEs or other platforms, other vendors that provide those services so that we actually do lock-in that patient engagement.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

And I would – my comments included a lot of the concern and lack of data standards, and provider patient identification to be able to make that happen. There are a lot of SNFs and skilled nursing facilities and home care agencies that are manual and paper and they can't accept it even if we are ready to push it.

And the issue we talked about earlier in communities where it's tough enough to manage your referring physician population because they don't update their fax machine numbers or their e-mails, or whatever that's the challenge to make it happen and then you drop in the patient there as well to communicate to them.

I'll go back to the statement, encourage you to read the comment from the physician that provided it, the medical record in the continuity of care document is not necessarily appropriate for every patient. So, the patient engagement and their participation in their care is a very important objective for today and the future clearly, but that may not be the information that they need to buy into and maintain their awareness and participation in the care. So, it is very much what we're trying to make happen in the construct of the requirements and the lack of some of the infrastructure that's out there in the environment around us.

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

My compliments to these two to saying exactly what I would have said, so ditto.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

How about Tom? Tom, you've been quiet is there anything you needed to jump in on?

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

No, I would concur with the comments just made on that topic as a summary. I also just wanted to make a comment around the previous topic with physicians, that's kind of where I was going with my comments earlier that if you do not – in order to accommodate that physicians slower process around the physician documentation process, I mean, they all love physician order entry, absolutely agree with that, but when it comes to physician documentation it will slow them down.

In the overall scheme of things it improves the patient outcome and the process, but in the short run of implementing physician documentation you've got to give them a ton of, at the elbow support, to allow them to get past all of these changes. So, that's just a higher priority than some of these other things like the discharge summary. So, I agree with all of the previous comments.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, thank you. Anne?

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

So, I'm going to just clean up on the theme of asking about things that you didn't mention that came up in the physician talk. Can I assume that you have all of the same issues that the physicians did as well including the usability issues and the – you know, so it's basically everything even though you didn't touch on it, because I've been kind of catching that theme even though you went to your hot buttons.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

Just to reiterate my Penn State Hershey Medical Center is a 900 physician medical group, the IT group and the vendor are attempting to meet the needs for both the eligible hospital and the eligible provider in the same system with different timelines, different, different, different and when you change it and you move the mark for us and we're tracking for some that are there and some that will be in the future and some are in process it's very difficult for us to do that and it diminishes the value proposition that we have in front of us to be able to move in this direction. We're spending a lot of time on the logistics to audit, track or be prepared for an audit to make it work and I think that's the challenge that we have.

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

We're in a similar situation to what Rod just talked about, we are trying to do the Meaningful Use process in three different buckets so to speak, our primary care group, our medical group and the hospital, so trying to keep track of all of this is significant.

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

So, just one follow-up. Do you have the same specialty challenge within the hospital that exists on the physician's side?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Yeah, we do, in particular with CPOE and documentation there are different needs there and this is where after you implement, you know, many of us that met Meaningful Use Stage 1 I think got there and then luckily we had a few years, you had to stop and pause and go back and optimize everything that you did if you rushed into it because it wasn't usable by all specialties.

So, you had to have – especially if you have a larger acute care facility that may be a trauma center or transplant center it's not one-size-fits-all and you have to – and not only it's not a one-time job either. I don't know that anybody has mentioned this, the optimization and continual work on orders sets and documentation is a never ending cycle that as soon as you get done a year later you need to go back and look at all your transplant order sets, look at your transplant documentation, it never ends. So, its work that will be there, good work, good work, but it will be there forever for us.

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

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Around the table and also I want to come back to Paul, because we do want to ask a question about Stage 3. Christine?

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

Thank you. So, thank you guys very much. I want to come back to the portal issue because we've heard it in both panels and just ask for any solutions you might have. The idea was – we had the same concern that you did, that you could have a patient who is asked sign up for 6 or 7 different portals, right, and that's a big burden on the patient. We also talked about particularly, potentially for specialists for example, that they, you know, may not need to stand up a portal, maybe we should think through some other way to give them credit for giving patient's access as long as we have this ability to download the health information, right?

So, kind of automated Blue Button, if you will, where you could sign up and say when there is an update to my records send it here and then maybe you don't have to stand up a portal. We weren't ready for that technically speaking, I think it's something we can look again at in the future, but the idea in fact is, I may have to sign up for 7 portals right now in Stage 2 but I can download everything into one place and that's a place that I choose as the consumer.

So, if you have ideas whether it's – you know, to streamline that process knowing that we have that capability to at least get the information in one place so maybe I've had to sign up and maybe I have to download, you know, a couple of times a year, but I don't have to do it every time, every portal, every day for example. So, if you have thoughts on that I think whether it's right now or off line later that would be helpful, some way to leverage that download function.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

I don't have any real thoughts, but just a couple of comments. Personally, where I believe the great value is with the primary care physician and the portal so they have the participation in their long-term care. Where we have oncology and oncologists who for a period of time the patient is there, transplant patients there is a long-term where it's episodic in specialty there is no need for that. So, we even have the challenge internally within our medical group around whose problem list is it anyway, whose medication list is it anyway. So, we are sorting that out internally but at the end of the day I think we're going to find that those providers, primary care in particular are the ones that will have a greater patient portal interaction for the right reasons. No answers just we're kind of dealing with it moving through this at the current time.

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

And I don't disagree with that at all, but I think, you know, for the – that's why I think for the specialty piece that transmission of information, we tried to be technology agnostic but right now I think the only way to get there is through one particular platform which might be a portal, but for hospitals I think it's really essential that we continue down the pathway of giving patient's online access whether it's through a portal or through a HealthVault account or some other mechanism, you know, for all the reasons that we know, but particularly because it allows the patient to then transmit or the family member information about their admission to their primary care or their main doctor if you will.

So, what we've done is looked at how, you know, how can you – we've interviewed providers around how you build it into your workflow so that it actually creates efficiencies for the clinical practice and my hope is the specialist can find those same efficiencies as well.

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Let me bring up a point to what, you know, you were just talking about, about possible solutions and I think what has us both standing in two different worlds at the same time and not knowing which direction to go and that's ACOs and those kind of payment models. We are an ACO and guess what, on top of the other two portals that we're trying to stand up or have stood up the physician one, now we're doing the hospital one and now we're doing an ACO portal and trying to get information into there and we're having a hard time discerning kind of who's going to be the winner in this game and it feels like, it feels like it's going to be the ACO, the group that is most responsible for managing my care as the person that in the long run I'm going to trust to go to as my portal and where I want to do my interaction. So, we're very focused here on physicians and hospitals but we have yet this other entity looming out there called ACOs, Accountable Care Organizations.

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

I'll make an additional comment on that as well. I mean, from what Rod was talking about earlier, I mean, being able to stand up a patient portal inside a hospital and that's the way it's going to have to be for us because a lot of those folks that we serve don't have the capability of having their own computer, I mean, they don't have it at home and they can't always get to the library or a place like that, so we're going to provide that to them, then we're going to stand up a helpdesk in order to be able to help them get online and learn to use that, because we have techno geeks, I mean, there are some of us that will learn to use it rather quickly, but we have a huge population that it's going to take a long time for them to learn to use it.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

All of that while you cut 5 percent of your staff.

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

That's right.

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

Could I add one more comment to that, this is Tom, I totally think that ACO comment is very appropriate lending to, you know, a plethora of existing portals and at the same time, you know, unless you have some sort of an online scheduling follow-up concierge service for folks coming out of your ED where you can set them up or teach them how to gain access to that portal, it becomes a significant educational task with an entire suite of folks to support that either ongoing initiatives, I think we just have to keep reminding ourselves that everything we've talked about doesn't stop when the project stops. These are ongoing support activities for ever more.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, thank you Tom. We're going to move to Mike, Cris and Marc and Paul. So, if you guys would – if one of you has the basic response, if you're comfortable with that than all 3 of you or 4 of you don't need to respond. All of your information is critical to us, but I want to try and get to the questions too. So, Mike?

Michael H. Zaroukian, MD, PhD, FACP, FHIMSS – Vice President & Chief Medical Officer – Sparrow Health System

So, thank you. So, my question is going to focus on clinical documentation and I'm struck by some of the comments and went from that world of documenting either with scribbles or dictation to finding actually some great value in structured documentation, participated in some evidence-based history gathering which can again help with quality and I'm interested and intrigued by the tension between what we should be doing for clinical documentation for Meaningful Use and your input and suggestion to the Workgroups in that regard.

But, as I think about the heavy lift of ICD-10, which hasn't been mentioned here, we all have our own clinical documentation improvement initiatives we're going to need to do around that or our eligible hospitals will be hurting severely in the issues of the ICD-10 transition.

But, I'm just interested in that plus you sense of the kind of usability that makes the kind of documentation that we're looking for doable and the kinds of summaries that that might represent in either clinical visit summaries or some other kinds of transition documents that can help issues of note bloat, issues of open notes phenomenon and how that might drive some of the changes that we're looking for and even along the lines of whether we should be looking at standards or encouraging movement toward natural language processing versus other kinds of structured documentation. So, any thoughts?

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So, Rod, do you have – I think you may have physician documentation, I know several of you are working on it.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

And we have 2 minutes to respond to that question?

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Pretty much.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

It is an issue that we're struggling with. I know others are working on natural language processing. From the stand-point of the clinician we hear all the time of it was easy to dictate or easy to write and be done with it and let others pull the quality and the discrete data and everything from that, that's the theoretical promise of natural language processing to pull that from that. I think the issue is where do we strike the balance clearly in short-term and the long-term to make that happen.

But we are looking at everything and with ICD-10 right now imposed on us in that same timeline we are very constrained in terms of what we can do. Like I said, I've been at Penn State Hershey one year, we have our Chief Nurse Officer, I've said this to many people in public, she's one of the few that I've ever wanted to hug because she has literally said she wants to blow up the nursing documentation and only collect information that the physicians will use. That is a tremendous opportunity to work with us and our vendor who is also excited about it, but at the same time were doing Meaningful Use, we're doing ICD-10, we're doing all these things, it's very difficult to blow up what we have in place already as opposed to just continue to float down the river with it and build another dormer on it.

So, it is a great question we don't have the solutions. We've got to figure out how to incrementally chip away at it and I think that's the challenge we all have, whether it's Marc having built his system or groups like myself that have a vendor solution. It's about the documentation to add value for the delivery of care with a byproduct for Meaningful Use. I don't think we're there and I think we're a long way from where we need to be.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, I see head shaking, Randy, did you have something or are you okay?

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

I just had one quick comment, because we're in a very similar situation trying to move the doctors from this dictated document that they've done for years to trying to enter discrete data elements that we can use for continuity of care and continuous care.

Michael H. Zaroukian, MD, PhD, FACP, FHIMSS – Vice President & Chief Medical Officer – Sparrow Health System

If I could ask just really quickly another way to put it. I personally find requiring a progress note to be way under aspirational with regard to moving the needle on quality. So, if you had to pick something else besides the whole progress note to require documentation of that's part of a progress note, what would you do?

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

I'd defer to the physicians. I mean it really is in terms of from the stand-point of delivering the care what do they need not just for that episode but for future episodes and what are the quality indicators to link that. I think we need to ask the question there. We're doing a lot because we have to, we're not necessarily doing what we should be doing and I think that's the challenge that we have in front of all of us.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

It's a great question, Mike; I think we probably need to seek the answer to that one. Cris?

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Thank you. So, fantastic testimony. I guess, I'm trying to think about how to bring this back to so what can we do about this, especially looking forward to Stage 3, to some degree around Stage 2, you know, what support is available to help you all, but you seem all like many hospital CIOs sophisticated folks who are trying to figure this stuff out.

But if the levers that we have to pull primarily or that ONC has to pull primarily are regulations that pertain to the EHR technology and the levers to pull with respect to requirements on practices. And as I listened to the combined testimony here I'm not hearing – I'm hearing you talk more about the burden on the implementation of the technology and the requirements on the practice and additions of things like HIE and portal and quality measures, and meeting certain numerical goals and so on, as opposed to complaints and concerns about the adequacy of the EHR implementation of the required elements of Meaningful Use and I just want to get your reaction. Is that true? Do you think that the challenges are more around the hospital attestation or are they more about the adequacy of the certified technology to support you in that task?

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

Based on the things that we have seen so far it's the attestation because, I mean, the system that we've implemented does what we need it to do, part of it is it's a new system to us, so part of it is learning that system and having all of our clinical staff to learn that system and to adapt the workflow the way the system needs to be designed. I know there has been some mentioned of workflow and should we design a system to the workflow or should we turn it the other way around.

We've tried our best because we think the system should be designed for the best workflow for healthcare not necessarily the way we have practiced over the years, because that may not be the best workflow. So, we've tried to go with that workflow that it was designed to do. So, it's a big change for us, but we think that we're doing the best that we can do to meet the attestation, not blaming the system because it's doing what it feels like it needs to do.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

Can I – I'd like to advantage to read what I was given and vendors are forced into selecting a specific workflow to certify and we often find we must either ask for modifications to the reporting logic or completely change an existing embedded workflow in what we're doing. We're not opposed to changing workflow if it's a better workflow. We are opposed to changing workflow only to prove that we're meeting the intent of the requirement. We are faced with that every time and the vendor is faced with it all to build a system to support many and then we have to localize it, build it in a workflow that works for us and be able to move forward.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Pam or Tom any comments, quickly?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

I would just like to bring in kind of a little bit of a side topic here, but we talk about attestation, you know, one of my qualms in moving too quickly to Stage 2 is after going through Meaningful Use audits and working with other colleagues or listening to other colleagues who went through the audits, I mean, it's kind of scary where you might have jumped into Stage 1 saying I understand the intent of this measure, I understand it and I'm going to do it. And then you come in and get these audits, you can't imagine how many hours our hospital has spent defending ourselves against stuff that was never really, in my opinion, laid out with this is going to be a requirement during an audit.

So, it makes you very hesitant to move forward with the Stage 2 attestations not knowing what's going to come at you and the way I would describe it is we read them and we said, oh, yeah it's already, we've got to dot every I and cross every T, we get that and that's a little onerous, but now we're finding out that the T was supposed to a squiggly cross on the T instead of a straight cross on the T and nobody ever told us that and I think this is going to cause fear and it's going to cause people to drop out at Stage 2 of just thinking it's just simply not worth it.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

I think the real trick is to commend us and reward us for being successful for moving forward not punish us for being so and I think the audit fear is a real high anxiety item for those of us that haven't been and pain for those that have and I think you need balance that effectively.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, I'm going to go ahead and move to Marc and Tom we'll come back to you in just a moment.

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

Sure.

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

Okay, so thank you again for what you're doing and the testimony you gave and I empathize greatly with what you guys do every day. A quick question, as it relates to implementation and then as it relates to usability I didn't hear you say anything about security, security requirements. Do you have any comments you might give us relating to those two areas around, again around implementation and around usability?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

Yeah, it could be said very simply –

Marc Probst – Vice President & Chief Information Officer – Intermountain Healthcare

It's a softball.

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

I think every single one of us heard it, no one else in this city requires the doctors to do X, Y, and Z before they get onto our system and I can get to it from my home without any passwords and we all hear this from our doctors because they are very frustrated with kind of like what we're saying about the patient portal, they're very frustrated with what they perceive as barriers to getting access in the name of security, that said, all of us being IT professionals we know how real the possibility is of a security breach and we want to protect our data as best we can. There's a real push/shove going on there.

Randy McCleese, MSIS, MBA – Chief Information Officer – St. Claire Regional Medical Center

And we get comments daily about the things that we have to do for security reasons. Logging on, going through the encryption process, those kinds of things it's constant so we just expect that as part of the job.

Rodney C. Dykehouse, MHSA - Chief Information Officer – Pennsylvania State Hershey Medical Center

And I think the issue of the politics of high access and availability to security and privacy is where we live every day, you too Marc and many others, it is part of the challenge and maybe the reinforced schizophrenia that what we have of, yeah, you'll get it but we have to protect it, we have to track it, we have to know it, it is an incredible burden on us every day and it's a growing burden on us as both the access goes up and the demands go up for broader access to it.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

What I'd like to do is have Paul ask the last question and I'd like to start with Tom on the answer please.

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

Okay, thanks, and this is channeling David Muntz who is just to give him credit for a question that we should have asked all the panelists and it's somewhat responsive to what you've said, particularly Rod in his last comment. So, first of all we've heard a lot about facts, a lot about the underlying infrastructure, standards and culture of this transformation and in some sense we actually have to push everybody to do this for any of us to win.

So, you could look at Stage 1 particularly and Stage 2 even as trying to do that, raising the whole escalator thing and the whole raising the top because if somebody doesn't force your clinical training partner it doesn't work. So, that can be part of the excuse for what we've been trying to do with Stage 1 and 2.

Now Stage 3 we are really and that's pretty short time really if you consider we only started in 2011 trying to get to the products and that Rod just said, why don't we just reward us for doing good and that's what we're trying to – that's exactly what we're trying to do. We've certainly heard and this panel has been very illustrative that the burden of complying with requirements despite the good intent. Now the HIT Policy Committee is the good intent committee I just want to remind you of that.

So our question, we are looking toward finding ways to simplify things, make it more flexible and reward good behavior and two of the strategies that we have, and you may have heard this before, we're going to talk much more about it in the August and September policy meetings, is one is consolidation, so take the 25 and compress it to, I don't know – anyway near half that's one so that you can on the way, sort of this byproduct thing, satisfy a number of requirements.

But more importantly is the redeeming option. The deeming option is the reward good behavior option that is if you're already a high performer or you're already making big strides in improvement, so you have two avenues there even, then you almost must have used an EHR and HIT in order to get there and that would apply in Kentucky just the way it would apply in Wisconsin and in Chicago, etcetera. So, that's our thought.

So, the \$50,000.00 question and you don't have to answer it now, but write us in very quickly because we're presenting this in August and September, is what quality measures do you think and we actually have more of a challenge in the hospital world, what quality measures do you think would illustrate we are doing a good job, we are using an EHR.

So, if we knew you were doing a good job in this quality measure, gosh you must have had the support of an EHR to do that. So, that's the illustrative quality measures that would deem you in partial fulfillment of the Meaningful Use objectives.

And then the corresponding ones then are which ones should we deem? Which functional objectives should we deem if you're a high performer or a high improver? So, those are the questions we're really interested in your responses to and anyone's. We put this out in an RFC but we're still open to this. We do it very quickly but that's the kind – we're trying to come back and be responsive to exactly what you asked for, which is with the eye on the prize if you are doing well on that prize then let's stop burdening you with proving that you do X and Y and we see the predicament both in the vendors and the certification requirement which automatically hardwires something which changes your work, we get that, we're trying to avoid that. So, if you can help us with any input. So, open to any response now and for the future.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Yeah, thank you, Paul. I think his – and certainly as the Chair of Meaningful Use it's very clear that they understand and are hearing what you guys are saying, what I'm saying, what all of us are saying, if you have an immediate response that would be terrific. If you want to think about it and send in to through Michelle so that we can get this to the right people, but Paul's right, we have a very short window where you can influence the Meaningful Use 3 Stage measures.

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

No the recommendations.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

The recommendations excuse me, the recommendations. Any immediate feedback or you want to think about it?

Pam McNutt – Senior Vice President & Chief Information Officer – Methodist Health System

My only reaction is I do like it, I do think there should – that there should be – let providers get there, you know, as they can, if they're a member of an ACO and ACO is driving it for them great, if they're a standalone and they want to drive it, great, but let their good work – I like that a lot, a way to link those two together makes a lot of sense.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Tom, because we can't see you your card maybe up, anything from you?

Tom Pagano, MS – Division Chief Information Officer – HCA Healthcare Capital Division

Yeah, I would just say I know that HCA corporately is commenting on that but in theory I agree with that approach that you described I think it makes a lot of sense, but I would just go back to the last topic and that is no matter what the measurement is, whatever those quality measures are that the audit and security aspects of it be, to any extent possible, simplified so that we can show that we're doing it without such an impact on the resources to pull that data together.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Great, well, thank you, great testimony, very, very helpful for all of us. I know it takes time out of very busy schedules and we appreciate it. I'll remind all those the non-break is now going to be a real lunch and you do need to be back at 12:40 promptly so we can recess the hearing.

Michelle Consolazio – Office of the National Coordinator

One forty.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Oh, 1:40, excuse me, I live in a different time zone, that would be 1:40, thank you.

Applause

Operator

Thank you for your patience. Your conference will begin momentarily.

Michelle Consolazio – Office of the National Coordinator

We're going to get started soon if everyone could start to take their seats. We're going to get started if the panelists can come up to the table.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you for your order and Cris Ross is going to moderate our next panel on health information exchange interoperability. Cris?

Michelle Consolazio – Office of the National Coordinator

We need to open the lines.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Oh, sorry.

Michelle Consolazio – Office of the National Coordinator

Operator if we could open the lines.

Operator

All lines are bridged.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you and thank you all for getting back from lunch. Our next panel is fully seated and Cris Ross will be moderating a panel on health information exchange interoperability.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

So –

Michelle Consolazio – Office of the National Coordinator

Cris, before you start.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Yes?

Michelle Consolazio – Office of the National Coordinator

Can I just ask when we get to the question portion if the panelists could announce themselves again for our transcript so we know who is speaking, thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

All right, are we good to go? So, everyone this morning wanted to talk about HIE. So, if you're a boxing fan you know this morning we had the under cards, we had the welterweights, we had the flyweights and now, now we have the heavyweight panel. So, I'm going to get out of the way. If you could all please introduce yourself briefly at the beginning of your comments. The 5 minute rule applies; there will be bell at the end of the 5 minutes and no punching below the belt and if we could start with John Blair.

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Good afternoon, thank you for inviting me and I'm with MedAllies a direct health information service provider and I will answer most of these questions under that vein but also I am with DirectTrust and am perfectly happy to answer questions around DirectTrust during the Q&A.

So let me go through the questions that I feel I can answer from a direct health information service provider stand-point, some of these I didn't hit, so describe how you address the Meaningful Use requirements for the inner organizational transition of care in Stage 2. As I said, MedAllies is a direct health information service provider focused primarily on EHR interoperability. In addition to integrating EHR vendor products using Meaningful Use certification specifications we're working with several vendors on workflow considerations around provider on boarding, getting them on networks and active, and also usage of those EHRs, so system usage.

We understand provider on boarding to direct networks through their EHR has to be easy for this to really work. This means identity management must balance security needs with reasonableness of effort and the provider registration process for these networks needs to be consistent with current industry approaches. Providers need to easily find all endpoints on any accredited direct network, therefore directories need to be federated between HISPs and kept current at the provider organization through HISP EHR synchronization.

Finally, interoperability means clinical workflows within each organization's EHR need to comport with those of EHRs in other organizations for clinical use cases dealing with transitions of care. The next question, I'm sorry, if we achieve all of this we believe providers can meet the 10 percent electronic transition of care requirements in Stage 2 Meaningful Use next year.

Next question, will you use the direct standards to meet interoperability requirements for Stage 2, are your business partners prepared. We will be using direct standards for MU2, all the EHR vendors that we are currently working with are prepared to meet those interoperability requirements and several have achieved 2014 certification.

Do you anticipate challenges because EHR vendors may require the use of a specific HISP? This is a little bit complicated, but we don't see any challenges with EHR vendors using specific HISPs provided that those HISPs transact with EHNAC DirectTrust Accredited HISPs, if that occurs all provider endpoints on an accredited HISP should be accessible to any provider on their own respective accredited HISP.

What are the new EHR compatibility – with new EHR compatibility required in Stage 3 or beyond what new requirements would better facilitate exchange? Our recommendations for Stage 3 would be to continue to enhance the workflow functionality that leverages interoperability across different providers. So, for example, currently when a primary care provider on one EHR sends a referral to a specialist on another EHR over a direct network there are different work flows in each organization. The ultimate goal in interoperability would be for the workflow between those two providers on different systems to be virtualized as if they are on one system.

Next question, what have vendors done to support interoperability between certified EHRs? The vendors that we work with are focused on practice workflow to support clinical use cases for interoperability.

What gaps remain to support exchange between certified systems? The current gaps relate, we believe, to directory standardization, directory federation and directory synchronization between HISPs and EHRs. To close those gaps all direct HISPs would maintain a directory based upon an agreed up standard, direct HISPs would share their directories fully with other accredited HISPs and finally an automated process for updating and querying directories would exist between certified EHRs and accredited direct networks.

What have you experienced or have you experienced any challenges with interoperability when both systems are purported to be certified for the intended purposes? We've not been experiencing any significant interoperability challenges and again, the vendors that we're currently working with through test or in production are certified 2014.

Were there additional challenges to get the exchange to really work? What were the solutions you applied? The challenges we are working through to get the network to really work on a large scale –

Michelle Consolazio – Office of the National Coordinator

John, your time is up.

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Oh, well, this is really good, okay, thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

David?

David Whitlinger – Executive Director - New York eHealth Collaborative

The clock is running, my name is Dave Whitlinger; I'm the Executive Director of the New York eHealth Collaborative. New York eHealth Collaborative is a 501(c)(3) nonprofit, it was a public/private partnership formed by the Department of Health in the State of New York to organize the health information exchange activities across the state. It is the state designated entity. And I'd like to offer you a little bit of the view that we entered into.

The state embarked very aggressively on health information exchange prior to Meaningful Use and prior to the current administration. New York, as you may know, is a very diverse state 19.6 million people, 14 million of those people are actually either in or within 150 to 200 miles of Manhattan. So very dense region, very highly fragmented health care system and this will become important in talking about interoperability.

We have 240 hospitals, almost 1000 labs, 1100 imaging centers and one of the more important stats 18,000 single doctor practices an opportunity for 18,000 single EHRs all of them in some various form of difference. So, it's a very, very highly dense environment from a population and care delivery perspective and it's a very fragmented system.

We also have what would arguably be one of the bigger problems with regards to the cost and efficiency of healthcare delivery. Five million patients are in the Medicaid Program, \$53 billion is spent on those, yes it is the highest in the country by a lot and it is not by any stretch the best quality of care or efficient care as admitted by those departments.

So, that brings us to health information exchange. We really embarked aggressively both Medicaid Department and the State as well as the Governor, aggressively on shifting from fee for service to managed care and doing that very concertedly with forming ACOs and health homes which are team-based care models and is aligning the incentives towards that.

The health information exchanges across the state are also heavily engaged in helping those organizations succeed. So, last year we worked very intently with those organizations to determine what were the capabilities that they needed with these new team-based care models and what came to the forefront query-based exchange being able to get all of the records on a given patient so that you had the best possible information, Directed exchange so that you could facilitate the transactions of care or the transitions of care from one care facility to another, care plan management.

So, if you can imagine, 18,000 doctors all with their own EHR product and now being clustered together into teams they now need a place where they can put a single care plan that they can now share collectively on. It's a workflow management, it's kind of like where's the SharePoint for this workflow of doing team-based care with a single care plan.

Lastly, patient engagement, a lot of emphasis on if we can give patient's access to all of their records in one place, not have them go to 18,000 single EHRs and try to figure out their login and have the providers deal with that, one place that they can go in, we can get patients to be engaged.

So, we embarked upon the development of interoperability standards in order to support Directed exchange and query-based exchange. We did that with 19 other states, a couple of dozen vendors and created what we call plug-and-play standards, out-of-the-box two products, the HIE network and the EHR product work out-of-the-box together to support those capabilities.

We think that it's very paramount that those are the capabilities that regardless of whether your HIE is a public HIE, private HIE, formed because of an ACO, formed because of a large IDN these are common capabilities that should be standardized and we cannot afford the cost to glue together all of these different proprietary systems.

We really need to use Meaningful Use as the opportunity to substantiate these standards into the marketplace in a plug-and-play fashion with certification and a logo program that's easy, easy, easy for the provider community to acknowledge, recognize in the same way that many other industries have reached this same maturity level in the past.

So, with my remaining seconds, I'll implore you to ask a lot of questions if you will about how we would see these standards maturing forward how there can be better partnership between the public and the private sector in order to do this expeditiously before more dollars are spent on Meaningful Use without the appropriate standards to succeed in team-based care. Thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Thank you. Dr. Larson?

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

Thank you. My name is Tim Larson I'm a kidney transplant physician in Mayo Clinic Rochester and also have the fortune of being the Medical Director of our Information Management Program there. Currently, Mayo has links to two peer-to-peer-based networks, one regionally based the Southeast Minnesota Beacon Project and the other nationally based the Care Connectivity Consortium both are in operation and both are CONNECT pull-based exchanges and we anticipate that we'll continue to utilize these exchanges moving into Stage 2 Meaningful Use, however, we are also aggressively looking into establishing a Direct-based solution by the end of the year.

We expect to meet the Meaningful Use 2 requirements for the 10 percent exchanges based on this new Direct solution. And I'd like to just briefly take a couple of moments to review a recent example from our Beacon Project of how HIE was used to obtain correct and timely medical information that impacted patient care and this involved the public health nurse who works with a targeted home visit program providing education and support first-time parents at risk of not providing appropriate care for their children. The public health nurse meets with the client in their homes and plans their care based on the information from medical providers usually obtained by phone and/or fax.

In this case the public health nurse was working with a single mother and her child and the infant with significant health needs, it was a 4-month-old who had been a patient newborn intensive care unit and had subsequent medical appointments, ongoing therapies and recent hospitalization. The public health nurse needed to know the child's plan of care to support the mother's efforts to provide appropriate care and obtaining this information proved to be challenging and time-consuming and the child's mother was a poor historian, the public health nurse spent a lot of time on the phone requesting medical information from the child's provider.

The information was either faxed or relayed over the phone by a clinic nurse looking up the child's record and reading the physician's notes. And recently the public health nurse was preparing for a home visit to the child after hospitalization and had not yet received a fax of the child's recent hospital summary, and she decided to try HIE and she used the PHDoc HIE System to request external documents and received the child's summarization episode documents within minutes.

She arrived at the home armed with the child's most recent medical information, was able to clearly reinforce the physician's order and support the mother in the caring of her child and I could review several other use cases both in specialty and primary care without a doubt see considerable value in the continuing evolution of HIE to support patient care.

I'd like to now emphasize a few aspects of HIE we believe need particular consideration as this area evolves. First when vendors create proprietary closed networks or use proprietary technology for exchange it reduces interoperability and limits the expansion of HIE, we oppose any effort to impose a proprietary system of HIE that requires people to connect to their vendor solution or a particular network and we look at organizations such as DirectTrust and Healthway to help set the direction for connectivity and to enable a nationally-based open exchange model.

Another point of emphasis is that the variability that is inherent with current standards make interoperability between vendors a technical challenge. Mayo Clinic supports continued refinement of the standards and protocols used.

Finally, there are four EMR or HIE capabilities in policy that Mayo Clinic endorses. One that has been mentioned before is national patient identifiers. Two a standardized patient authorization process rather than multiple state-based laws. Three, more data rich exchange payloads. Currently, discharge summary standards hold a lot of information but they're weak in their management of their provenance, for instance when they were created, who was the other patient other metadata linked to the documents.

We also believe that the documents incorporate into the summary document need to be able to stand on their own. And lastly, is promote open-source HIE solutions. Thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Thank you, Mr. Horrocks?

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

Hi, my name is David Horrocks I'm the President of CRISP the Statewide HIE in Maryland. My colleague Scott Afzal who is our Program Director for all things HIE helped me prepare the testimony. CRISP connects the 46 hospitals in Maryland. We support about 15,000 queries by clinicians a month and about 50,000 encounter notifications a month sent mostly over as Direct messages. Our testimony is in response to the questions.

Describe how you'll address Meaningful Use requirements for the interorganization transitions of care? So, we believe this is a specific area of Meaningful Use, one of just a couple, in which we can be helpful to our participating providers. Our encounter notification service can assist hospitals in meeting the 10 percent requirement for delivery of C-CDAs by routing those documents to our subscribed practices. We do believe we are in a position to help with this but we also know many organizations in Maryland that are pursuing that without the help of an HIE.

Will you use Direct standards to meet those requirements for Stage 2? So, CRISP currently does offer HISP services and issues Direct accounts and this is almost all of that is to support our encounter notification service. We expect most providers are likely to use their EHR vendor's native HISP services to meet their Meaningful Use objectives and we're eager for the EHR vendors to implement Direct especially into workflows. CRISP's current Direct service is accessed through a portal that can never be, I think, easy enough from a workflow stand-point for routine use in clinical workflows.

As far as concerns, we do have a concern that EHR vendors who do not support other HISPs could complicate the rollout for larger organizations which are unlikely to be wed to a single EHR vendor but still may want a common Direct service provider for their large organization.

What approaches will you use to meet the HIE requirements for Stage 2? So, from an HIE perspective we don't honestly view Meaningful Use as a critical driver to our service offerings and our planning for that nor are we clear that there are HIE requirements per se in Meaningful Use Stage 2.

Beyond the transition of care opportunity, which I mentioned a moment ago, we are working to align our services, we are looking at submission of reportable conditions as something that we can help with, but we're more focused honestly on provider reimbursement policy and the evolving incentives to coordinate care. And for us working with our state health officials is really important as they're involved in setting the agenda for population health management initiatives and some of the incentives that are enforced in our state.

What have vendors done to support interoperability and what gaps remain? So, we believe the focus on C-CDA documents and Direct is really key and while progress has been made on the various interoperability profiles we've not yet found them to be of much consequence in our own work integrating with the EHR systems.

If ambulatory clinicians could send and receive C-CDA documents in efficient workflows significant progress could be made in our own ambulatory HIE efforts and I think in many other things as well. To that end a big gap that exists is that we have very few clinicians in our state who are currently using EHR supplied or integrated Direct accounts so progress has been slow on that front.

What HIE services are most important in meeting EHR Meaningful Use requirements? As described above our impression is that an HIE might be able to help with some things but it's really not essential.

Have you experienced any challenges with interoperability? Well, as noted above we have had some in variation and how HIE profiles have been deployed.

Have you made or received electronic transitions of care to healthcare providers including skilled nursing facilities and homecare agencies? Yeah, we are recipients of a Challenge Grant. We found that our initial efforts proved pretty costly and difficult to broadly replicate nor did we find much eagerness among the SNFs to enable the service. After Direct becomes ubiquitous participation in exchange by those groups should hopefully be easier to pull off.

I want to note though that for those groups their automation includes interaction with physicians and if the physicians are still paper-based or can't communicate electronically it's going to be tough for them to automate. Thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Great, thank you very much you all gave very clear responses to the questions we put in front of you and I appreciate it. So, I imagine this is a topic that a lot of people are going want to ask questions about, but to get started what I'd like to ask is a couple of our morning panels, the eligible provider and eligible hospital panels, you know, raised a number of concerns about next Stage of Meaningful Use and HIE was one of them and their ability to hit the 10 percent targets and their confidence that that was something that their EHR vendors and others were going to be able to meet.

And we heard comments about sufficiency of messaging standards around the usability of the data that's received, the appropriateness of CCD for some clinical settings and so on. But you all present a relatively optimistic view about what's really happening in HIE which is great news.

So, if you were to respond to – and you may or may not have been here to hear those comments this morning, but do you believe that eligible hospitals and eligible providers are going to be able to meet the 10 percent transition of care requirement as well as the patient engagement requirements which often depend on some of this allied technology?

I would just be interested to start with your viewpoints about what should be our level of confidence that the industry will meet the Meaningful Use 2 standards? I'll turn to any of you to start, to answer.

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Level of confidence somewhere between worried and will be able to make it. So, for us and I can't speak to traditional HIE, I'll talk about Direct because that's what we're focused on. I think the hospitals are particularly in a tough spot because their time ends in July of next year. They have to be there by July and their trading partners for those transitions of care are going to probably be discharge summaries from the ED and from the hospital inpatient and therefore they have to be sending to ambulatory physicians on systems, 2014 certified systems that are in place, and those practices need to be using those systems. Those practices do not need to be ready until October. So, that disconnect – I mean, this one time we finally hit a place where the use of these systems goes beyond your walls and so I think that's going to be a problem.

I think that if you – all you have to do is get 10 percent of what you're doing going to a clinical trading partner and so what we're advising is start to understand who in the community will be on their systems when, how much volume of work you do. So, if you're a primary care provider who are the specialists you refer to, if you're a specialist who do you get your referrals from and a hospital who are your largest admitters. And we're actually starting to get into that and if you start looking at that it's not going to be impossible, but again, I think that one disconnect has worried me a little bit.

David Whitlinger – Executive Director - New York eHealth Collaborative

So, I'm optimistic. We have over 80 percent of the hospitals in the state are connected to one health information exchange or another and we're stitching together that into a full statewide network by the end of the year. So, the other 20 percent, some of those quite frankly it's, you know, in the hospital community that isn't likely to achieve Meaningful Use anyway for other economic reasons and their ability to use the health information exchange in order to achieve that measure I think is going to be notable.

The other thing that we're doing is in order to encourage both the connections to and usage of the health information exchange is we're hanging a patient portal off the health information, the statewide network that will allow any hospital that connects to be able to achieve their patient engagement criteria because of the patient portal that's being sponsored by and hung out by the state. That also, we believe, is a much better patient experience rather than a patient running around to all the individual EHR products. Here all of the records are in one place. And that has really had a lot of motivation and interest from our hospital and ambulatory community.

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

So, I'll just add a quick note to Dave's point on the patient engagement front which is, you know, I think our perspective is that most of the eligible hospitals and eligible providers will buy what their vendor is offering and it's going to be a pretty high price to get it done. The ability for us to aggregate information as the primary motivator versus the convenience oriented functions of an application communicating with your provider, scheduling an office visit, refilling a prescription, those are the things that are going to recurringly drive patients to an application.

So, we're hesitant to make a heavy investment in a patient application upfront to serve this Meaningful Use objective if it's not ultimately going to be able to satisfy those convenience oriented functions and in long-term drive patients back to the solution for ongoing engagement.

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

Just make a comment as well, I think we're also or I'm optimistic that we'll achieve those goals. One of the challenges in thinking about, and it was discussed earlier, is the workflow challenges. So, we've had a number of years embedded of workflows related to phone calls and faxes, and now in the timeline being able to switch over to HIE-based technology is going to be a challenge given the timeline. I think it's the right way to go and people will adapt to it see the benefits of it but it's a timeline and it's the new change management that dismantling the way of doing things a little bit differently than what they were doing before.

Michelle Consolazio – Office of the National Coordinator

Can I just remind the panelist to say your name before speaking? Thank you.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Great. Can I turn to Wes Rishel for the next question?

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

This is Wes Rishel. John, we had interesting hallway discussion about the influence of an EHR vendor's implementation on the acceptability of Direct and I wanted to say that of course is nothing new. We found the same thing about receiving CDAs. That at one time people might have believed, oh, they simply went into the database and became part of the record, but when people started to do interoperability receiving input data they found that they needed to create a dialogue for the physicians and some did a more user-friendly job of that than others.

The problems aren't the same necessarily with Direct, but what in your opinion constitutes a good implementation not by name but by features of an EHR vendor and what do you see as a backup plan for an interim state where some vendors are doing better than others? Thanks.

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Yeah, I think this is one of the most important pieces. I think that a lot has been done with standards and what Dave mentioned and many other things. But if these systems are too difficult that's where there is a risk and we did the – we participated in one of the reference implementations for Direct three years ago and ours was all strictly EHR interoperability and we worked with about six vendors, since that time at a few sites and with a lot of physician input and we've really looked at the interoperability and the workflow and our Chief Medical Officer, Holly Miller, has been very involved in that and she is just dying to get this going with physicians using the system.

I've actually started to get a little worried in the last six months with the on boarding process before they ever use it and that gets into registering the providers, issuing addresses, dealing with certificates. There are several things around that that could become an issue, particularly small practices. So, you know, we can talk about that more, but getting the doctors going, the administrative piece before they ever use it is of concern to me, particularly when you're talking about all of the doctors across this country for Stage 2 Meaningful Use.

Now, having said that, if they all get registered and they're all on the networks and they're all live and it's all working great, we've seen now across several products the usability and it can be very easy in a provider's workflow when they're seeing a patient to get a referral out or deal with those kinds of things and then there are some that are several clicks, several screens that are of concern.

I think that as we heard earlier, because I caught part of the eligible provider talk, even if the software is not perfect, if they want to do this they will get workarounds in their workflow to do it. So, I haven't seen anything that's a showstopper but we've only seen half a dozen of the vendor's products and how it works, but again, you've got many, many products out there and we saw what happened with ePrescribing in 2003 and 2004 and 2005. Those systems were not good and it was very tough to get the doctors to use them. So, I think that this is a concern. I think that they will, most of the vendors have products that are usable though.

Cris Ross, MBA – Chief Information Officer – Mayo Clinic

Amy Zimmerman?

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

Hi, I have two questions. One, in any of your states does your state require any type of state-based continuity of care form or transition form and how does that relate or how do you see supporting that with transitions of care in Meaningful Use? So, that's one question, like how do those two blend and do you support providers in that area?

And the other question is, from a privacy perspective and a consent model perspective does that affect or impact your ability at all in terms of assisting providers with meeting the transitions of care requirement for Meaningful Use?

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

I'll take a shot at those two questions answering the second one first. Our consent model works today because our opt out rate is relatively low but if patients were opting out in larger numbers it would start to affect our ability to do those transitions of care and we might need to tweak the model to allow for those sorts of transactions. Today we're all in or all out. We don't have state regulation that enables the transition of care documents although for MOLST or POLST documents there is some regulation pending that we may work with. That said, I do think that state regulation to enable services like this is going to be important in Maryland and those will be tied to the initiatives that our state health officials think are important and the priorities that get set. So, in the last year we've become tighter with our public health officials I think for that reason.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Go ahead Tim.

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

I'll just mention maybe as a side comment about the consent process and state authorization as being a referral center we see some challenges with of a lot of potential and for instance I'm in the transplant program and receive patients and interact with patients all across the nation and to have differing authorization states mandates and try to handle that and manage that we anticipate to be a significant challenge.

David Whitlinger – Executive Director - New York eHealth Collaborative

I can't comment to your first question. I'm not aware of any standardization or regulation around that particular item but regarding consent we have across the state we're an opt in state, 95 percent of the time when a patient is asked if they would like to opt in they affirmatively respond and sign a consent form. Across the whole state we're around 25 percent of the state has consented at least one provider, at least one provider and in some of our communities we are actually above 80 percent of the community in the more up state region where it is a little less fragmented from the healthcare delivery system.

And in addition to this being a driver for the admissions departments of certain hospitals to be a bit more attentive to applying the consent and in addition to the patient portal we think that actually it's going to be a driver to resolve the liquidity of data by the end of next year.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Can I ask just a follow-up question on that, David Whitlinger, your comments about New York were really useful but you mentioned in your comments, and I've been impressed over the last several years how you've helped collaborate with other states as well, would you be willing to comment on what you think the landscape looks like in the 18 other states just generally speaking that you collaborate with?

David Whitlinger – Executive Director - New York eHealth Collaborative

Yeah, sure and sorry, I keep on forgetting, this is Dave Whitlinger. Yeah, the other states that are part of the Interoperability Workgroup are of various degrees, you know, to some they have large organizations, perhaps similar to what we have in New York that is standing outside of government and has technical and implementation resources maybe it's the regional extension center and other things, in other cases they're smaller organizations that have limited budgets inside a smaller Department of Health.

All of those institutions though came together two years ago and unanimously decided that query-based exchange was important in the delivery of care and transitions of care and so whether or not they had the resources to actually produce engineers that rolled up their sleeves and wrote the technical specs collaboratively with our engineers or whether or not they had other folks that had the ability to review those, everybody participated and everybody voted on the final work product both the requirement specs, technical specs and the test specs. So, it was a fairly robust process.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Thank you. Anne Castro?

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

Hi, tomorrow when they asked me what I thought I need some help, I'm a little confused. So, if I'm a physician or hospital and I get an EHR and I follow Meaningful Use requirements am I automatically interoperable with all of you in any of the areas that you work and if not when I think someone mentioned, more on that side of the table, that it's going to cost a lot of money, can you help me understand what the cost is of a provider hooking up who is following our guidelines, becoming Meaningful Use 2 certified, they're getting a 10 percent bar but it'll go up the year after it will go to something higher.

So, I don't really want to know your confidence on 10 percent, I'd like to know your confidence on higher and what really is the task that the hospitals and physicians who have Meaningful Use certified EHRs, what do they have to do to in order to interface with each of you? Money and time?

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

I'll talk, this is John Blair. So, not just us, I'll speak in general first. So, I think if you have a Stage 2 certified system and the second thing for Direct is you need to be on an accredited network. If you're on an accredited network, and this will be a DirectTrust comment, one of the components of that is signing a Federation Agreement, the service provider, that you will transact with any other accredited network. So that means if you're on an accredited network and you're in a certified system you can hit everybody else in the country that has the same situation, that's the first thing and that's the situation with us.

Now pricing for us it's really – the vendors are – most of the vendors are incorporating that into their offering. So, it's hard for me to speak about what they're going to charge. I think you're going to see everything from no charge it becomes part of the ongoing pricing to maybe a charge for the connectivity initially and then an ongoing, you know, 18 percent of that module or a fee per annum and I think those fees are probably be in the \$100.00 to \$150.00 range per provider.

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

And you're speaking for Direct, right?

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Yes.

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

Okay, thank you.

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Yes.

Scott Afzal - Program Director – Chesapeake Regional Information System for our Patients (CRISP)

This is –

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Go ahead.

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

This is Scott Afzal from CRISP, you know, I like this question because it removes us from the abstract to a really specific what services are we talking about and interoperability to achieve what, right? Are we talking about sending a clinical document over a Direct into an EHR or are we talking about patient discovery and the standardization and interoperability necessary to do that. So, these are different things.

I think from your specific question the ability, for example, of a Stage 2 compliant eligible provider to send a C-CDA to CRISP over Direct would allow them to “be interoperable” with us, we could receive that document. Now how we get information back to them, how we support them doing a query, right now we're not interoperable, we're not supporting inbound, you know, HIE patient discovery transactions. We can but we're not doing it yet because we don't see the demand in the community.

I think the follow-on to that is I think something Micky Tripathi has presented on which is this concept of view-based integration. Almost all of the query transactions that we support right now, and I would suggest that most do around the country, are by providers logging into a web-based application searching for a patient by last name and date of birth and then viewing information that's aggregated across sources.

We can reduce the workflow burden associated with that by single sign on and patient context integration but that's not really interoperability from a message, a vocabulary, a transport perspective but it achieves a similar end. So, I think, you know, from a Stage 2 perspective we'll be close on receiving data, it will be harder on getting data back out to them depending if we're pushing it or enabling a query and so I think it's a good question but a nuance to one that's got a various set of answers depending on how far into transactions you want to get.

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

So, what I think I'm hearing is you would charge more for the integration with the system?

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

Yeah, so I didn't answer – so for us in our model we're not charging ambulatory providers for services that we provide to them in our model.

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

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

That's not a relevant part of what we do.

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

But we're also not integrating.

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

That's right.

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

We're giving you information, you're going through a portal to get at it most of the time or you're going to get it as a Direct message.

Anne Castro – Vice President, Chief Design Architect – BlueCross BlueShield of South Carolina
Tim, are you a separate answer on this?

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

I guess I don't have too much more to comment.

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

David Whitlinger – Executive Director - New York eHealth Collaborative

On directed, and I should just fully disclose John Blair and MedAllies is our vendor for our HISP for the New York networks.

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

David Whitlinger – Executive Director - New York eHealth Collaborative

You know, there are costs from a provider perspective. There are costs associated with getting credentialed and we're absorbing those cost but that can't be forever, right? There are grants involved and so forth. There are costs with I think – substantial costs that have to do with change in workflow, change management being able to adopt these things into your workflow. So, those things take time and energy similar to the way the time and energy was spent on regional extension centers to go from paper to electronic health records. Now your work on the next workflow adjustment, so, those costs are there.

We are hearing of vendors that are charging toll fees, right? So, they're charging toll fees up to \$2.00 per Direct message because they see that as something that they are accomplishing and they would like to receive revenue from that. Let me jump over to the query-based exchange. We have a fairly substantial number of connections across our state, as I said, 80 percent of the hospitals are connected for query-based exchange. So, they're sending us patient demographics, ADTs, CCDs whatever, you know, their current EHR products can support.

Building those interfaces without standards is expensive. They're all hand done one by one engineers sitting down building connections and the first one of a kind can be cheaper than the last but there are a lot of one-of-a-kinds and, you know, those are anywhere from \$20,000.00 a throw to \$100,000.00 throw for a very, very complex hospital system. It's very much in need of standardization and we think that the standards are there, they need to be employed in a much more significant way.

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

Cris Ross, MBA – Chief Information Officer – Mayo Clinic

Larry Wolf?

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So, I guess we're all circling around the same set of topics. So, I'm intrigued with this coalition that David spoke about. Maybe you guys can speak a little bit more about that, the dynamics that brought it together beyond sort of the broad brush, hey it would be good to partner. It looks like you've got a lot of people who have signed up which is very impressive and it's sort of refreshing to actually see what looks more like – I'm not sure it's bottom up, it's at least sideways kind of energy here as opposed to kind of a top down of regulations. So, any insights out of that that would be helpful as we look at the next round of regulations?

David Whitlinger – Executive Director - New York eHealth Collaborative

You know, I would say that I think there is an interesting challenge here that we are all faced as a community and that certainly the federal government is faced with in a significant way. The industry for a number of reasons, and we all know this, has not embraced interoperability over the course of the last several years or decades and for a number of reasons. Other industries that folks are fond of pointing to say, well look at Wi-Fi or look at Bluetooth, or look at USB because here are industries that have come together for the purposes of interoperability developed technology and have working industry alliances and collaborations and programs.

That clearly wasn't working in this space. But, I think there is a difference between the standard setting processes that can happen with the right industry oversight and with the right industry engagement and I think we were able to bring together the states that really had a vested interest in health information exchange and a very interested and query-based exchange and that represented a large mass of customers who cared and that I think was very paramount in bringing together the vendors who also thought that this was going to be something that was going to be able to differentiate them in the marketplace that their products would be plug-and-play compatible with the state networks that were forming thanks to the state HIE grants. So, there was that establishment of we can differentiate our products by becoming aligned to these state networks that are growing in strength and interest.

I think one other aspect was there was a really concerted effort up front to be thoughtful about the provider purchasing decision and how nobody should have to know what the letter HL7 mean, that there needs to be a very simplistic mechanism, stolen again from the tech sector, put the Wi-Fi bug on something, put the Bluetooth bug on something and people just know, I don't know what's under the hood but I know it will work and that's the kind of simplicity that this needs to evolve too quickly.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

So, let me follow that up with a question related to standards. So, in this panel I think crudely put there are sort of two channels of exchange standards that have been discussed. One generally supports query, pull-based exchange, the HIE Connect exchange sort of standards and the other is push-based based on Direct.

There has been some inquiry by a couple of the Policy and Standards Committees, the Information Exchange Workgroup and the NwHIN Power Team to look at augmenting those standards with potentially some additional standards. So, there has been inquiry into a fairly simple web services-based interfaces like RHEX or FHIR for example.

Sometimes there is a little bit of a view that maybe the IHE standards are a little bit too heavy and the Direct standards are a little bit too light and maybe we need a Goldilocks standard of something maybe closer in the middle and RESTful exchange might fit the bill.

Would love to hear from you about whether you think that viewpoint that some additional standards would be beneficial either in provider to provider exchange or provider to patient exchange for purposes of patient portal support? Or do you have the viewpoint that the existing standards are adequate?

David Whitlinger – Executive Director - New York eHealth Collaborative

So, I'll give my – this is Dave Whitlinger. I'll give my first viewpoint. You know, regardless of – the IHE standards have been around for a while of course and similar to, for example, IEEE 802, which is the Wi-Fi standard, right, it's under the hood, it's an IEEE technical standard. The reason why we did not get tight interoperability out of the IHE standards was not because they were inadequate it was that they allowed too much optionality and too many variations and so by tightly profiling that to a specific set of options you can achieve interoperability.

And when we got together two years ago with the 19 states and multiple vendors that was what people actually gravitated to was we have these standards there are just a couple of pages that we have to cross out some options and we have interoperability because for the most part the vendors have been working towards IHE profiles for a number of years for a number of different reasons. So, those products are already at the point of being able to be interoperable quickly from a time to market perspective.

So, I think, you know, that's where we gravitated to with the Interoperability Workgroup is how quickly can we get to interoperability, plug-and-play using existing standards and it was remove the optionality out of things that were already baked into a lot of the vendor products.

So, you know, quite frankly to some degree when Direct started to move forward the IHE profiles were probably further along in instantiation in the software products themselves just because of the time in the marketplace and we would say that both are necessary tools of course.

If there were to be standards setting moving forward in regards to query-based exchange, I would strongly employ time to market is necessary start there. The marketplace has gotten to this place already, but there can be an evolution, right? There was 802 or Wi-Fi A through N, you know, and Bluetooth 1 through 3, there can be an evolution.

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

This is David Horrocks with CRISP. I know there are places where IHE and what you termed the query-based standards are important and places where they've been successful, but for what we do, what CRISP does in Maryland and connectivity to, you know, thousands of doctors, they are, as in our testimony, they're not consequential and they are like several orders of magnitude in expense away from being consequential for that purpose. So, I am skeptical that improving those standards make a difference for what we're doing. There may be other places where that's appropriate.

Now on the other hand, I think that making Direct ubiquitous and having the ability to move C-CDA documents like that's – we're putting all our hopes onto that for interoperability, like true interoperability with the ambulatory physicians. So, everything else we do with them is what Scott said, view integration or through portals, it's not really sucking documents into EHRs or true interoperability. So, I'd say please make Direct ubiquitous, make that a focus that would be great from our perspective.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

David?

David Whitlinger – Executive Director - New York eHealth Collaborative

This is David Whitlinger, I'd just like to say Cris, and just in – a little bit of experience that we've had because of the time that New York has put into the HIE, Rochester is one of our more mature communities, they have over 80 percent of their patients consented or I'm sorry 60 percent of their patients consented, they have almost 80 percent of their physician community consented. They're see 30 percent reduction in redundant labs, 30 percent reduction in redundant imaging.

You can't get that – the workflow is somebody looks into the HIE and sees that the lab was already done, they don't order the redundant tests, they look at the lab results and they proceed forward in the patient care. You can't get that kind of workflow from Direct. You need to be able to go look and see what the other clinicians have done on that patient somewhere and unless everybody's sending all of their Direct messages, it's difficult to replicate that in a different way.

There is a place for query-based exchange and it is showing substantial value in the markets, it's difficult to achieve the adoption levels and the data connectivity, no question about it, standards would help, but there is value in query-based exchange.

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

I'll follow-up, can I just follow-up?

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Yes.

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

I agree with David on that. We believe there is value in query-based exchange. We're just pursuing it with single sign-on and patient context passing because we are doubtful we'll succeed other ways.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

So, I see I asked a standards question so now the cards come up. So, we'll go to Joe Heyman first and then Wes and then Marc.

Joe Heyman, MD – Whittier IPA

So, I'm in a 200 member independent practice association with a lot of small practices in a place about 40 minutes north of Boston, 45 minutes north of Boston and we just purchased – we just signed a vendor agreement to actually make our long-standing HIE – we're one of the Mass eHealth Collaborative choices for a community, we've had EMRs for seven years but we haven't been able to connect. The physicians are dying for a query-based system. The Direct system is great but it's not appealing to the physicians who are really interested in getting clinical data from a central source.

And maybe I missed this in your testimony, but we know that for some of our larger, you know, for the EMRs that most people have accepted in our system we can afford some of those interfaces. But we have practices where only one person has an EMR in that particular brand and those interfaces can be very expensive as you mentioned earlier.

So, maybe you've already said it and I missed it, but is there something either in a specific thing, not just saying, you know, we need more standards, but a specific requirement that you would suggest be part of either Meaningful Use or the certification process, a specific requirement that would make it cheaper, across-the-board, for everybody to have an interface into a query-based system?

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

So, this is Scott Afzal from CRISP, I'll make just a brief comment which is, and I think this is kind of underpinning to a lot of the decisions that have been made to date but to mandate that kind of capability and potentially measure would suggest that there are exchanges that are capable of transacting in that way throughout the country which we know there aren't.

Now, you know, this is a more – a very different model, but we have seen and we have interest in pursuing a model in which, and I'll use the example of a HealthVault-like application where a provider would have to be able to send a Direct message, again coming back to David's point about why those two standards Direct and C-CDA could be so powerful, but at the end of an encounter, in compliance with the view, download, transmit measure in MU2, send a C-CDA to that patient's HealthVault account for example, which in turn could be queryable, right? And so that you start to move to this patient directed query-based exchange to supplement those areas of the country where there isn't an exchange that can support that kind of service. So, it's an imperfect answer, but potentially an interesting shift in that direction and one we're interested in looking at ourselves.

Joe Heyman, MD – Whittier IPA

If a CDA is in HealthVault is that importable? Is that information within that CDA importable into EMRs?

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

Not to speak for HealthVault and Dave Whitlinger might know –

Joe Heyman, MD – Whittier IPA

Well, I mean, for that kind of system.

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

If you could –

Joe Heyman, MD – Whittier IPA

Without any –

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

So, the first question would be could you send a standards-based query to HealthVault to retrieve that document and if so I don't see any reason you couldn't have a structured C-CDA.

Joe Heyman, MD – Whittier IPA

But, I guess what I'm concerned about is I don't want to retrieve a PDA I want to retrieve the clinical information not a PDA.

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

CDA, I'm sorry –

Joe Heyman, MD – Whittier IPA

No, no a –

M

PDF.

Joe Heyman, MD – Whittier IPA

A PDF I'm sorry.

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

Right.

Joe Heyman, MD – Whittier IPA

Yeah, thank you, it's my age. I don't want a PDF I want the clinical information imported.

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

Sure.

Joe Heyman, MD – Whittier IPA

And as far as I know there are plenty of places that will charge me \$25,000.00 to make that possible for that particular EMR. So, I'm looking for an incentive. I'm looking for something in Meaningful Use 2 or Meaningful Use 3 rather, or in the certification process that would be a powerful incentive to make that problem go away. Because, I think that's the biggest problem for HIEs. If we could make that problem go away it would be a lot easier.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

– for further inquiry. We're slightly over time, so Marc we'll let you go last since Wes already had a shot at this. So, can you finish us off?

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Well, I'll try to. So, we'll try and do it with energy. So, I'd be curious to hear from each of you one sentence which is what is the one thing, if you have your magic wand, that you would want to have changed to make interoperability faster across the country? You only get one, one sentence each, we'll start with Scott?

Scott Afzal – Program Director – Chesapeake Regional Information System for our Patients (CRISP)

The ability for an ambulatory provider to send a C-CDS outbound at the end of an encounter over Direct.

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

What Scott said.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

No, you've got to have a different one, no that's okay.

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

Boy, that's a tough one.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

We'll come back to you.

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

Yes, thank you.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

David?

David Whitlinger – Executive Director - New York eHealth Collaborative

One sentence.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

You can cheat, you can have two, I'm not as tough as Michelle is.

David Whitlinger – Executive Director - New York eHealth Collaborative

Strict plug-and-play standardization, true interoperability.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

What does that mean now, take that down a level?

David Whitlinger – Executive Director - New York eHealth Collaborative

Have the standardization meet the expectation of when the customer buys the product that it is truly interoperable without them hiring engineering and professional services to glue things together.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

So, is that the message formats and structures, is that the network interoperability, is that the terminologies? I know it's all three, but which one is the most?

David Whitlinger – Executive Director - New York eHealth Collaborative

I would say today it's the plumbing. I think that we are coalescing, at least from an older perspective in the HL7 messaging and in the future on the CCD structures that those are making reasonable progress, but I don't think we've standardized the plumbing to the extent necessary.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

John?

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Do I get two sentences also?

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Sure.

A. John Blair, III, MD, FACS – Chief Executive Officer – MedAllies

Okay, good, all right, so two things I think, one that as the providers purchase and deploy their systems that it comes packaged with the appropriate connectivity to the networks that are necessary to operate and two, that a provider using a system that does want to send to another provider can easily find that provider to do that send at the time of the message being sent.

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

I may not answer this directly, but maybe open source HIE solutions from the vendors to be able to facilitate.

J. Marc Overhage, MD, PhD – Chief Medical Informatics Officer – Siemens Healthcare

Okay, thank you.

Timothy S. Larson, MD – Medical Director for Information Management – Mayo Clinic

Okay.

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

Terrific, thanks very much to a really engaged and informed panel. We really appreciate your time.

Applause

Christopher Ross, MBA – Chief Information Officer – Mayo Clinic

I'm going to turn it back over to Liz.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you, I know how well it went last time when we said no break, so, you know, we're going to try it again, because we have a lot of speakers on the next panel. So, if you need to take a break, yes, I see you standing up over there, if you need to take a break please just step out individually and let us continue, because this is – I think usability is going to be one of our most interactive panels and we want to get as much time as possible. So, if you would assemble and Paul is going to – and George are going to facilitate that discussion. Thank you.

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

Great and George is going to be the moderator for the discussion.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

– George is going to moderate?

Paul Tang, MD, MS – Vice President, Chief Innovation & Technology Officer – Palo Alto Medical Foundation

Yes.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Wait, what happened? Very good, we're going to get started I think.

Michelle Consolazio – Office of the National Coordinator

If everyone can take your seats so we can get started.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Well, that's Michelle's job I can't do that.

Michelle Consolazio – Office of the National Coordinator

And as a reminder to all panelists when the questions come can you please try and state your name before speaking? Thank you.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

All right, very good, we're going to get started. This is George Hripcsak, this is our fourth panel on usability and because of our six speakers we're going to get started right away. Art could you start us off?

Art Swanson – Director of User Experience – Allscripts

Sure, let me see if I can scoot in a little bit here, first of all, good afternoon everybody, thanks for the opportunity to come speak today I appreciate it. I'm not going to go through all my written testimony I think that's included in everyone's packets, but I'll try and hit some of the high points and particularly I kind of wanted to echo some of the comments that previous speakers have made during the day it's one of the advantages of going last.

You know, one of the key questions is what are the most critical dimensions in usability and I think we've heard these terms echoed throughout the day and it's about workflow and customization, and you know, those two things, clearly from a vendor in general perspective and at Allscripts and specific perspective are big issues from a usability perspective and interestingly enough those are also two issues that are very difficult for vendors to address.

Workflow, when we try and do workflow research the only data that we're able to collect is from our own existing customers and the difficulty is that that's a biased sample. These are customers that are already using our EHR systems so they've already adapted their workflow to our EHR models and so it's this kind of self-reinforcing system that tends to stabilize these workflows in their current state rather than driving them in new and innovative directions. So, workflow research that's outside of the scope of any one particular vendor I think is a really important point and I'd like to emphasize that.

Another critical component was customization and again, this is another area that's very difficult for vendors to address because whenever we go to our customers and we tell them customization is bad they tend to look at us and say, well, you just don't want to give us what we want, you know, we're the client, we demand customization and you need to satisfy us or we'll take our business elsewhere.

And so, again, having more generic research that comes from independent third-parties on what are the downsides of customization and research around where the true needs for customization versus, you know, where the real stability in workflow coming from an independent third-party source I think would give us the ability to help educate our clients, our existing clients and our potential clients on what level of customization makes sense for them and their organizations. So, I kind of wanted to hit those two things.

Addressing some of the specific issues in the questions that were raised prior to this testimony, there are questions about timelines, you know, I think all of the vendors, clearly with the MU2 requirements around safety enhanced design, if they hadn't already been doing UCD process they certainly have started now. Allscripts has been doing this for quite a while now and we have a pretty robust UCD process. We believe in it very strongly and the point directly about timelines is that all of our current releases certainly use the UCD process and we're getting even more rigorous in that over time.

However, the question was is when are we going to see the changes in usability because of this UCD process? A UCD process is evolutionary by its nature and so it's going to take several releases before there is meaningful change in the usability of these systems and so particularly for those vendors that are just starting that process it may take a little while before you see that meaningful change.

Mobility, so there was a question about mobility and a UCD process around mobility and I thought that was great, because certainly we hear from a lot of our clients that mobility is a really hot topic and people think it's a silver bullet to a lot of these usability issues, it's not, it's just another deployment platform and if you don't have a good UCD process you can screw that up as much as you can a desktop deployment. So, UCD is critical to this. We've been using UCD from the very beginning. And in mobility you also have to do more ethnographic and generative research up front to understand the environmental issues of using mobile devices. So, it's complicated.

MU2 usability challenges, again, I'll echo what a lot of people have said, the pace of MU2 requirements has redirected existing kind of development resources away from product enhancement and usability work and more toward MU2 compliance work. MU2, Meaningful Use overall has done some great things from an industry perspective so it's driving interoperability, it's driving EHR adoptions, those things are fantastic, but the reality is that it has not been a good thing for usability improvements in products.

So, the last piece is kind of how can ONC help in usability? And this is where my answer actually varies a little bit from my written testimony. So, the written testimony, and we still believe this, is that the UCD process if allowed to kind of stabilize and become robust within the vendor community is the best way to ensure the consistent and long-term improvement of usability in this products. So, we still kind of standby that and support that direction.

However, I think another couple of options for how ONC could help address usability issues come from those points around workflow and personalization. So some independent outside third-party research on both of those areas that the vendors could use to both educate their existing clients as well as drive their own product portfolio decisions I think would be really valuable and could lead to standardization across the EHR industry as well. Okay and right on time.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thank you, Art. Alisa?

Alisa Ray, MHSA – Executive Director & Chief Executive Officer – Certification Counsel for Health Information Technology

Okay, good afternoon Workgroup Chairs and Committee members, Workgroup members thanks for inviting me. My name is Alisa Ray and I serve as the Executive Director and CEO of the Certification Commission for Health IT CCHIT and I'm here today to speak to you about usability in a couple of facets.

I'd like to share a little bit of current data with you on our experience with the 2014 addition safety enhanced design criteria, what we're seeing in the field, I thought that would be useful and I'd also like to recap a little bit of CCHIT's independent work from earlier years because I think that could be an interest as well.

So, just real briefly about CCHIT, we were founded in 2004 in response to the first ONC strategic plan which recognized certification could be an accelerator for Health IT adoption. We executed a contract from 2005 to 2008 to develop the first voluntary testing and certification program for comprehensive ambulatory and inpatient EHRs and HIEs.

It was in the scope of this work that we undertook development of our first usability testing program; it was an independent rating system. It was first developed and launched in 2009 and operated for a few years there and about 75 different EHRs went through that. Now CCHIT operates as a NIST accredited ATL and an ONC authorized certification and testing body and that's where I'll comment about the other things there.

In terms of our usability experience, we adapted a definition similar to regulations, what you're all following the NIST definition, defining usability's effectiveness, efficiency and satisfaction within the intended context of the user's use of the system, right?

Our methodologies around this program reflected the perceived usability of a set of uniquely qualified expert evaluators. We used jurors at least one of those is a practicing physician, these folks had done work where they had certified and evaluated hundreds of EHRs to help be uniquely qualified to do this. I mentioned they tested over 75 products that was based on the CCHIT's public criteria and it was also unique in that they were able to follow the clinical scenarios end-to-end and use those perceived ratings there.

This is a little different than the current ONC efforts, again with modular certification, it's a little bit harder to do that integration testing and follow through, but again, it's more criteria by criteria there are eight components, right, that we're looking at under the SED criteria.

In the interest of time, I'm not going to go through the commission's recommendations on usability testing but we did testify at another hearing in 2011 the link to that testimony is on my slides you can see that there if you're interested.

Let me talk a little bit more now about the ONC, SED. Clearly users are encouraged. Developers need to apply the user centric designs to promote safe usability. It's an attestation-based criteria, right, the SED you need to incorporate all the data elements defined in the NISTIR template or others. Clearly they must do this before they come for development and certification as part of the development activities and they may use previously completed SED, multiple processes maybe applied or they may use non-industry standards and keeping moving here's a little bit of data.

So, here's our experience so far with the ONC 2014 edition program. Again, attestation-based we've seen data from 13 different vendor companies come through. It's a little bit slower start than in the previous program but still it's a good sample of data. Thirteen companies representing 23 products, 8 of these are complete EHRs. I think it's encouraging that 56 percent are using the NISTIR standards. Another 22 percent are using a combination of standards and about 22 percent are using some self-developed information and here is just a little more of a breakout. By far you can see the NISTIR standard is the one that's most frequently being seen, the second most frequently a combination and etcetera, etcetera, it's all in the slide deck.

So, in conclusion, optimistically showing that usability testing can be done and accepted by the vendor community and engaging providers in that process with the CCHIT program and we're also seeing good uptake and industry accepted standards being used and demonstrated in the ONC testing for 2014. Thank you.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thank you, Alisa. Colin?

Colin Buckley, MBA – Strategic Operations Director – KLAS Enterprises

All right, my name is Colin Buckley I'm with KLAS Research and I recognize many of your names here as participants with KLAS. For those that are not familiar we are a research firm. Our goal is to talk to providers about the performance of their vendors and make that information public and anonymous, but in public to help providers make the decisions about the technology they choose but also to guide vendors in knowing what they need to do to improve the products and services that they have and we do over 2000 interviews a month and we don't actually have our own opinions.

Our goal is to represent provider opinions and we did that in a couple of special reports that we recently published on EMR usability, one focused on the inpatient side and the other on the ambulatory setting. We reached out to about 250 providers targeting CMIOs and CMOs in particular to get some perspective on what they saw their vendor providing in terms of usability and what contributed to that. And in fact we partnered with AMDIS on this and appreciate their help as well.

So, we looked at some of the main vendors, there are of course hundreds of possibilities out there and we looked at some of the larger vendors for this study but we find that some of the things that we learned are applicable probably across-the-board.

So, when we asked organizations basically how is your usability today there was kind of a range. So, those that are the best-performing in terms of vendors we had about 80 percent to 90 percent say that they were successful in achieving high usability. On the downside about 50-60 percent for those vendors didn't perform well said that they were successful in achieving high usability.

And just wanted to point out kind of the two key things for a high achiever and a low achiever, in terms of the vendors, and the major thing that impacted, according to the providers, as we talked to them that they immediately talked about was that a good vendor actually held their hand and guided them through the process of usability. It wasn't just about the software. They actually came in house, they were instructional, taught the best practices and often delivered preconfigured systems set up for the best practices that the vendors are familiar with after having years of implementing these systems.

And some providers are kind of worried about having too much pressure from vendors in terms of configuring or not configuring their systems, but generally even when they felt uncomfortable about it they appreciated it and were glad because it gave them a head start in their own reconfiguration for their organization.

On the downside, the vendors that didn't do so well had very basic problems with the quality or code quality of their software. They rushed upgrades to the market that have a hard time getting those out to providers without lots of bugs and so forth and/or rushed clinical usability out for Meaningful Use and that sort of a thing.

Basically, it's just not rocket science in terms of the user interface design and that's kind of the main thing I would say out of this study is that there's kind of low hanging fruit for vendors and providers both in terms of usability. We don't need to wait to get to the next generation of software and mobile platforms and all those sorts of things.

In fact, when it comes to the mobile platforms we asked about that and only about half of organizations even try those systems. Most vendors offer them but even if they look nice, they have nice user face designs they're missing functionality and that's kind of frustrating for physicians to be able to see information and not be able to actually act on it in terms of entering orders and that sort of a thing.

Some of them opt towards virtualization software so that they can get full functionality but then they don't have the usability that they would like. We hear from vendors that they're going to be putting out these great new systems but we have not yet validated or seen one new next generation mobile application that really is truly functional and we are anxious to talk to providers as soon as those come live.

In terms of Meaningful Use usability challenges they are kind of standard ones that we've talked about. I think the ones that kind of stick out have to do with medication reconciliation and problem list and physician documentation in terms of poor scores for the vendors. But, it's interesting to note in all those cases the providers typically excuse their vendors to some degree that the medication reconciliation is about health information exchange or problem list is about how physicians actually remember to enter good information or take out irrelevant information and that sort of thing, that doesn't give the vendors a pass but it does say that vendors have an opportunity, again, in more of a guidance role rather than strictly a software design role and it's not KLAS's role really to give you recommendations on what vendors should do I'll have to let the vendors speak for themselves.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thanks, Colin. Nancy?

Nancy Staggers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

Thank you for the opportunity to participate in today's hearing. My name is Nancy Staggers and today I'm representing HIMSS as a member of its usability taskforce. We certainly thank you for raising the national awareness about the importance of EHR usability and user experience in general. So, across the slew of questions that you asked us I'm going to address two major topics and that is to briefly describe the current state of EHR implementations in usability and then how the ONC might help. The view is compiled primarily from end-user's perspectives including the nursing voice.

So, what does the current state look like? Well, every site starts an EHR implementation from scratch. What pick list is going to describe urine? Sharing content across sites isn't common and in fact some of those told us that it was contractually prohibited by their vendors or at least they perceived it that way. Every site has the same struggles with implementation and everywhere users struggle with a high data burden.

So, the driving force today from the user perspective is to hit the target base for attestation and to assure that funding is obtained. Vendors are rightly focused on functionality for Meaningful Use criteria so usability isn't quite yet fully on the radar. If summative testing is being done the results may be discounted according to one vendor who is actually doing that summative testing because they indicate that the site customization takes precedence or perhaps the issue is too vexing for one vendor to address like alert fatigue for instance.

Assuming that clinicians take the time to report a problem any usability issues are just merged in with everything else in large system change requests. The caveat is of course that if change requests have patient safety issues they receive a higher priority otherwise they are just merged with everything else.

Significant and specific development priorities aren't typically made public across vendor sites and then any usability testing results are stored informally within the site or within the particular vendor. So, 5 minutes, 5 quick points.

The first is about the vision and how the ONC can help. We see that the ONC has an HIT strategic plan that has a learning system as the pinnacle of 7 steps, is that what we're aiming for, otherwise we risk, in the military of what we say ready, fire, oops, aim, so make sure that we're headed in the right direction and then communicate to us what that means in more detail. Are we headed for a virtual national EHR, a patient centered system?

We know we have to include other entities like telemedicine, data from mHealth devices and more emphasis on the computer, on the consumer rather and the computer I guess. What infrastructure is needed though especially related to interoperability and we've heard that interoperability is key to affecting Meaningful Use in the future. So, it just can't progress fast enough at least from the end-user perspective.

Let's do smart content standardization like across sites. So, EHR starter kits so agnostic content and content that vendors aren't really interested in like what's the typical order set for community-acquire pneumonia or if we're going to use documentation templates then some standard ones there, some uses cases, testing scenarios that every site develops on their own.

Standardized basic functions, for example every vendor is doing a lab display and they're all different among 200 vendors or vital signs. What would be really useful too is a library of health EHR icons so that we can do away with the current icon that's the scale of justice but it really means an advance care directive so click on that.

And then consolidate and mark it available resources, for example the HIMSS usability taskforce developed a usability maturity model and this has documents so we might do that. Then allow vendors to innovate on wicked Health IT problems like creating the patient's story which we know is still very difficult within a system as well as across entities.

Work on complex displays like electronic whiteboards, like eMARs, clinical summaries and even computerizing whiteboards in patient's rooms so patients and nurses can use them. Change the whole venue to usability is about patient safety and evolve away from summative testing so do reporting of performance metrics and have benchmarks for critical tasks. We know that summative testing is really too late in the process to impact the product before initial release, so more emphasis on early testing and iterative design would be really helpful.

And then last in 17 seconds; create transparency for user experience issues. So, users at sites can't see usability testing results for their own vendors much less for other certified EHRs, so transparency would be really good. Maybe we need national repositories with analytics so we can discover agnostically what the vexing user experience issues are across sites and vendors. And then last include some best designs. We always focus on issues so include some best design and design practices. So, I thank you for your attention and look forward to questions later.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thank you, Nancy. Kevin?

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

It's a real pleasure to be here this afternoon and have this opportunity to talk with you. I actually did something I never do which is I wrote down what I wanted to say because by the time I get done with my first story we'll be 7 minutes into my presentation. It's been a very long day, I appreciate all the attention. The new prince still does not have a name. So, I can say, ditto, 90 percent, because I've been listening all day long and I do agree with about 90 percent of everything that was said.

I'm here as the CEO, President of the American Medical Informatics Association, but I'm actually here as an individual who has been involved in IT deployments for the last 20 years. I have previously submitted the AMIA task force on usability report which I encourage all of you to read it's really very, very good. It outlines many of the issues that we need to be talking about relative to usability.

I think that, you know, from my perspective we always talk about people, process and technology which is important but it's actually the interchange between the people and process which is change management, it's the process and technology which is implementation management and it is the people and technology which is enablement management. So, it's really those three spheres from my perspective that are most important when we start to talk about usability.

There are six things that I pulled out of the plethora of literature and information on usability that I think are really crucial in my experience. First one is design consistency is a major impediment. Imagine, if you would, pilots moving from a 737 to a 757, to 747 and having entirely different user interfaces. I mean, it doesn't make sense. I mean, I fly every day. I do not worry when I get on a plane. I mean, despite the fact that there was a crash recently in San Francisco I do not worry.

If I was admitted to the hospital I would be very concerned. As a matter of fact, several years ago I was admitted to the hospital and in fact I did have an error occur that I prevented because I was awake enough to figure it out that there was a problem, that's because of design inconsistency and I think that's a major issue that we need to address, it's something that we need to take on.

Now in the aviation industry this wasn't solved by government edict, this was solved by Northrop Grumman and Boeing, and Lockheed, and Cessna sitting down and saying let's have a conversation and let's figure this out.

In the United States when you jump into a car the steering wheel is in the same place on the left-hand side, the gas pedal is in the same place on the right-hand side and the brake is on the left, that doesn't change regardless of what car you get into. Yes, there's some minor stuff around, you know, where is the instrumentation and all that, but we have some standards. We don't have that in healthcare and we need to foster that and I'll come to what my suggestion is on that in just a minute.

We also have to appreciate that there's a difference in the various specialties. I mean, dermatology is different than radiology is different than surgery is different than family medicine and we have a one-size-fits-all mentality which doesn't work. You know, a dermatologist, as an example, are pictorial, they're not about written word they're about looking at pictures, that's how they follow lesions versus I'm a family physician I look at data, I look at information around the ongoing care of patients who have congestive heart failure as an example.

Third, we need to have system integration. I believe that we have lots of standards and we don't use them. We need to use the standards we have and we should have certain standards that we say, no, no exception, you've got to have this one, it needs to work, but we allow all sorts of customization that gets in the way of usability.

We also need to standardize adverse events and reporting, safety reporting. I think that this is a major issue. We have advocated at AMIA that we should follow the NIST common industry format. I think that that needs to occurring, so, I would encourage us to think about that.

Number five, I think we need to have a dissemination of best practices related to safe implementation of EHR. There is no repository today of safe practices, of best practices. We need to have that and it needs to be central, it needs to be someplace that everybody has access to and it's all open. Maybe de-identified but it's all open. That would be really helpful across-the-board for vendors, for the delivery systems, for doctors, for everybody who is involved in healthcare.

Sixth, my final point is that I think we need to look at efficiency, requires looking at all the steps in the process and I'm a big advocate, as many of you know, that it's all about the process, it's all about the workflow.

Michelle Consolazio – Office of the National Coordinator

Sorry, Kevin, your time is up.

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

My final point that I want to make and I'm going to take one more minute, I apologize.

Michelle Consolazio – Office of the National Coordinator

I'm sorry, Kevin, we actually don't have –

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

This is really the most important point.

Michelle Consolazio – Office of the National Coordinator

Time.

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

Which is that there needs to be a public/private partnership created where we have the vendors, where we have the associations, where we have the academics, where we have all of the critical folks sitting down together and having this discussion on an ongoing basis. It's not going to come from one or the other. I'll expand upon that later. Thank you.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University
Steven?

Steven J. Stack, MD – Chairman – American Medical Association

Thank you very much it's a pleasure to be here on behalf of the American Medical Association and I'd like to thank you for all the time you spent doing this today. It's somewhat challenging being the voice of the profession sometimes in these settings because as we offer feedback and input it has too often, over the years, been portrayed as negativity or "hell, no we won't go" or just obstructionism and I really could say for much of the input that came before me today, thank you, you've made the points I wanted to make and so thank you and it was across a wide diversity of input, vendors and hospital providers and individuals providers.

So, I'm going to take this few more minutes I have here to highlight some of the things that is in my written testimony others just have already said it often with much more detail and clarity. Even before electronic health records the medical record was undergoing an evolution and at one point it was a physician's repository to jog their memory over time or to communicate with other healthcare clinicians usually just physicians or nurses in history now it has become a tool for so many secondary uses that we are really asking it to do far, far more and arguably too much for a single document.

What this is doing in the electronic health record world, because the technology holds such tremendous promise that I know a lot of you around the table including myself get very excited about to compile, manipulate and use that data for other many beneficial goods for healthcare and society, it's transforming though the physician and even the nurse at the bedside into a data entry clerk not the clinician, and none of these things are zero sum propositions.

The more time a physician spends at a computer entering data that previously someone else did is less brain tumors they can remove time, less time that they can put catheters in clogged blood vessels, less time they can deliver babies, etcetera or less time nurses can start IVs and you heard some of the hospital communities say they're having to cut staff because it's their biggest outlay of expenditures.

So, I think we have to look at the usability issue because we want the clinicians to practice at the top of their license not doing things that don't require their license whatsoever. And I think we have all heard today that we share that goal.

Structured data is wonderful for a lot of things, for lab data, for medication lists, perhaps allergies, it's not so wonderful for other things and Pamela from Methodist mentioned how her physician's pushback on structured data, there is nuance in the history of present illness and in the medical decision making that gets lost in the structured data. So, I can say you have a distal radius fracture and it means you broke your wrist, but whether you're a 3-year-old whose parent broke your wrist because they dropped you out of a second story window and its domestic, it's abuse or you're an 80-year-old vulnerable senior citizen whose abusive alcoholic child broke your wrist is very different than it was "I see you slipped and you broke your wrist." It gets very hard to cram that kind of detailed into a structured entry format and very frustrating to the clinician who feels that they're losing the variation that's value added not just the variation that's not value added. So, I think we need to work on how do we preserve the important use of unstructured data until we get natural language processing which may be able to solve some of this for us.

Data display, there is too much metadata cluttering the information we need to see. When we look at the EHR that I use, it will show the date the medication was started, the date it was stopped, who last updated it, all sorts of clutter when really what I need to know is, what is the patient currently taking?

Now, perhaps a lawyer or a compliance officer or maybe certain clinicians might want to pull from that database more of that information in certain instances but almost always all we want to know is what are you taking currently and that's where we need to focus and hide some of this information. Just because it's in the database doesn't mean it should always be displayed.

We have limited cognitive resources and the amount of data we process daily is massive, having more of that clutters it really deprives us the ability to apply what limited resource we have to the problems at hand.

Medications, I used to be able to order say morphine sulfate or morphine 4 mg IV for a patient who had a painful condition now there are 15 different iterations of morphine that what the concentration of the solution is, the size of the bottle, the manufacturer all sorts of different things it should just appear once and I should be able to pick it.

Diagnoses lists, there is hypertension, essential, primary, arterial, systemic there are a lot of different types all I want to know is do you have high blood pressure or not. If I'm the specialist dealing with it I can pull out extra detail but for most of us we should let the software do more work and consolidate that.

The time it takes to do things is often longer in the electronic world because we're asked to put in a lot more data in detail at the time of ordering. I think we can fix that if we focus on saline lock means nurse placed a saline lock I shouldn't have to say what to flush it with, how many millimeters to flush it with and all that detail because that's covered by institutional protocol and policy.

I think if we were to focus on supporting the cognitive work of the clinicians, as was said by others, we would be able to make these far more usable without impeding the other benefits we hope to achieve. Thank you.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thank you Steven and thank you to the panel. Well, those are coming up quickly. Let's start with Joan.

Joan Ash, PhD, MLS, MS, MBA – Professor & Vice Chair, Department of Medical Informatics & Clinical Epidemiology, School of Medicine – Oregon Health & Science University

Thank you. I actually have a question for Colin, Nancy and Kevin because I heard a theme throughout your testimony which had to do with, and in fact this was one of the recommendations in the very nice AMIA usability report, which was that we should have some common design standards.

Nancy, you mentioned icons and Colin you mentioned some low hanging fruit, and I'd like to hear from all three of you what specifically we might do to put forward this idea of some fairly easy low hanging fruit.

Colin Buckley, MBA – Strategic Operations Director – KLAS Enterprises

From KLAS's perspective it's kind of hard to think about what could be done from a policy perspective because our goal is simply to raise awareness of what is successful so that others can see it and repeat it. And by low hanging fruit I mean that the – and we heard this earlier today that the software darn it, it does what we need it to do, you know, from a very basic perspective. And we heard that I can configure, in our interviews, we can configure the system to do all kinds of things. Our problem is that we don't have the time and the expertise to do it.

Some of the systems in the past used to have – in fact one of the top performing vendors in our study, if you look back to go live usability, it was very, very poor. So, they went a huge difference between go live to today in terms of usability. They had on average nine years to do that and we just don't have that right now especially with Meaningful Use and such things, but the vendors have all this expertise that they've gathered they can bring that and some vendors do and they bring it to the providers and say look this is what we recommend and then let's go from here.

Nancy Stagers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

So, my thoughts were to standardize across sites where it makes sense and one example was a library of health icons because every vendor has different icons and so providers using various systems which you heard in the eligible provider panel, many of them use several systems at once. So, any standardization that you could do like that.

Another thought is it's not interesting as a vendor to develop a lab display, I mean everyone does it but couldn't we have standardization there for instance or even farther down the line could we think about doing like a virtual national EHR and a display that everybody fed into. I realize it would be controversial for vendors because then they would become service providers and not so much designers but if we're thinking of the cockpit analogy then there would be a lot more standardization especially as we evolve interoperability and HIEs so that those data would feed in.

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

So, Joan, that's a fabulous question and I want to turn us back to the last thing that I said which is I think we need to have a public/private partnership to have that discussion. I don't think that there is a solution that I could put forward today that would be the answer, however, if we brought together the representatives of government, the ONC, the FDA, HRSA, the VA, etcetera.

If we brought together the insurance industry through AHIP, hospitals through American Hospital Association, CMS and I would encourage the AMA to be a part of this as well, and if we brought together the major vendors, all of the vendors frankly, Cerner, Siemens, Allscripts, EPIC, you know, you pick your favorite one, bring them together and we said we are going to work on five areas for the coming year and we're going to have a consensus around what those five things are and we're going to hold ourselves accountable as a public/private partnership, I'm convinced that through that dialogue we would come up with those five issues.

If we don't do that what's going to happen at some point is that people are going to get fed up and they're going to do what they did in 1860 with the trains and they said it's going to be 56.5 inches. That's the rail to rail distance, that's the standard, go do it. I think that we have the opportunity for the healthcare community to come together and solve that problem together, but I don't think there is a single answer. I think it takes some further dialogue and discussion, and debate.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University
Alisa?

Alisa Ray, MHSA – Executive Director & Chief Executive Officer – Certification Counsel for Health Information Technology

Could I add onto and support of that just from experience in the CCHIT questionnaire, the experts actually – there is a section where they rated screen level design attributes and granted this was a very basic thing it was easy to get consensus on sort of font placement or size, or color, right, people could agree on that, but in support of Kevin's perspective it's agreeing on the standards and some of these things will be much more difficult but that's exactly what has to be done.

Art Swanson – Director of User Experience – Allscripts

So, I actually would like to add to that. This has actually already been done. So, the NHS in the UK actually commission Microsoft to do the Microsoft Common UI work. It took about five years and 250 doctors working through a lot of these standards, very rigorous, very well researched, very well-founded, had a lot of these same kinds of standards, you know, so they are intended for the UK market which is a little bit different from the US, but the point is that this work can happen. It shouldn't be misunderstood it's a huge effort to do these standardizations but it's possible and it's actually been done. Now I will say that NHS is rolling back those standards now because of issues with it. So, we need to take that with a grain of salt, but this is not new ground that hasn't been considered before.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Very good, thanks.

Lana Lowry, PhD – Project Lead, Usability and Human Factors for Health Information Technology – National Institute of Standards & Technology

I actually have a request to Nancy to comment a little bit more, but I would like to make a quick statement before that. My incredible concern is summative testing. We heard today the example about the menu. When the menu was changed and it cascaded to other usability issues and user deserving patients. When we do formative testing with informed design it's very critical, but formative testing does not validate that the final change made is acceptable for usability assessment that's why summative testing cannot be replaced by formative testing in the case that it validates the end design and small change can cascade into the big results.

Two more statements that I consider very important, its consistency. We have addressed consistency, yes, consistency probably the number two factor in usability after the speed of the performance of the system. What I would like to advocate for is consistency on a functional level not on the level of the task and design because innovation is critical and when we start prescribing consistency we would probably lose innovation. On the functionality level consistency is crucial.

And finally, I heard a lot about workflow, workflow. I want to make clear NIST is working right now on a document to guide the industry in building workflows that reflect precisely as we can the actual workflow of the physician and this document will be published probably in two months or so. So, there is confusion here. The workflow, the clinical workflow in the field is different than the workflow that proceeds the good design on the screen.

So, what I'm trying to explain that from the technical stand-point we really need to increase efficiency of the workflow of the screen and not to touch the workflow of the clinician that we need to preserve their ability to care for patients and the screen will just enhance design of the workflow to support the clinical workload. So they are two different things. So, if you don't mind to comment on my summative request I would appreciate it.

Nancy Staggers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

When I said evolve into formative testing I didn't mean that summative testing would go away. I just meant that doing only summative testing is very late in the cycle and if we're going to catch critical patient safety issues we need both of them.

Lana Lowry, PhD – Project Lead, Usability and Human Factors for Health Information Technology – National Institute of Standards & Technology

Thank you.

Nancy Staggers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

Yeah, 5 minutes is pretty tough to explain everything.

Lana Lowry, PhD – Project Lead, Usability and Human Factors for Health Information Technology – National Institute of Standards & Technology

Thank you again.

Nancy Staggers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

Yeah.

Steven J. Stack, MD – Chairman – American Medical Association

I would add the comment that first of all I agree with the consistency issue that having functional consistency is really crucial. On the workflow issue, maybe a slight disagreement which is much of the workflow in the clinical environment is built around paper processes and electronic processes in my experience are very different. And so if you don't reconsider the workflow you create work on top of work and that's where the problem occurs. It's not so much that, you know, it's bad, it's just that you create additional work on top of existing work and you don't take away the old stuff and you put on the new stuff and that's the core problem.

So, I do think that part of the – at least what I was interpreting from the many comments earlier today is that when we talk about workflow redesign it is really taking a holistic view of how workflows through the clinic, through the hospital, etcetera and redesigning it. And, I think, you know, there were many comments that were made that a lot of workflow is the same. I mean, ERs are the same around the world in my experience and we could come up with some common workflow that is consistent across all of the ERs.

Now there are some unique things based on the size of the institution, the fact that it's an old place and maybe it has curtains instead of rooms and, you know, there are lots of issues like that, but nonetheless, there are some consistencies that I think probably are across all delivery areas.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University
Nancy?

Nancy Stagers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

One area that I see would be really helpful early on is to just identify tasks by EHR function that people can use both in test scenarios and in summative testing for example an electronic medication administration record from the nurse, there are seven basic tasks that they do, just having a library of those kinds of things that people could pluck out and use versus having to sit down and think about them, that would be practical and very usable.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University
Amy?

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

Yeah, so we've heard, Amy Zimmerman, we've heard a lot today and a little bit of back and forth so I'm curious on your perspective. In terms of usability about structured versus unstructured data what's – you know, from your perspective what's the right balance from a usability point-of-view and then sort of embedded in that question is a question around sort of its variation and consistency, but it's more about where and how to place the data.

So, you know, one of the things that I always hear is that there's a lot of variation based on the EHR that's being used in terms of how information is recorded and where it's recorded so whether it's for quality reporting or whether it's for a provider to easily be able to access someone else's information either sending it or looking it up, you know, in a group practice or whatever that there's all sorts of variation there that then potentially can affect usability.

So, what recommendations do you have for us in terms of more or less structured data or what's the right balance and variation and consistency in terms of how to document the data to be able to make it useful and usable?

Steven J. Stack, MD – Chairman – American Medical Association

If I could start with that, this is Steven Stack from the AMA, so I – you know, it's difficult and it may not be heartening when people hear me describe it this way, but when I looked at that example this morning from the emergency board, tracking board, I could interpret all of that stuff and that's the information I need that MVC means motor-vehicle collision, ABD means abdominal pain, I could tell that EKGs were needed to be done in some of them were already completed. I could tell the kind of stuff that in my workflow, in my mind I need to run an emergency department and keep track of patients and where they are in their care over a multi-hour period of time.

For the structured and unstructured data where we end up getting into a problem is if there is a consultant's note from a nephrologist and from a transplant surgeon, and an infectious disease doctor I don't want to see all their evidence-base they've collected. Generally I want to see their conclusion and that is maybe a few lines. Otherwise, if I'm looking through a chart with five different physicians working on it, I don't want to look at five different physical exams and I don't want to look at five different summaries of different lab data and stuff, I'll look at the original lab data myself.

I want to see their summary and their summary is there synthetic thinking after they have looked at that knowledge base of fact and what have they presented as their conclusions and recommendations, that's a very small subset of the total data they're required to collect, to bill, to pay, to substantiate in a legal action. So, I think we need to preserve that valuable subset of information and be able to display just those things that clinicians need to have, so we can actually provide care.

Now all the other data will be in there and draw from one database for all the labs, for all the vital signs and all those other things and perhaps in a dashboard display if I want to see that stuff you can pull structured data that comes in from devices and from laboratory and other areas and we can all pop up our own dashboard and look at the structured data and then go to a separate place or a panel next to it and look at the unstructured data which is where we are going to get the biggest value from our human colleagues who are contributing to the care that patient.

Art Swanson – Director of User Experience – Allscripts

So, I'd like to kind of add to Steven's comment there. You know, we've been doing a lot of kind of research on clinical documentation and the reality is that there is some data that lends itself to being structured and discrete because it's important you know you're going to need to report on it. There is other data that is not, its narrative, right, and it needs to maintain its narrative and it needs to maintain its context and so I think that we all rush to judgment and say that everything in the record needs to be discrete and reportable, but for what real reason.

And I think if we take a little more critical view at it we can identify those elements that do actually need to be discreet that are important to be reportable and those things that we can maintain in a narrative form until we get to that panacea of NLP and then everything is auto magically extracted and that's not as far away as a lot of people kind of grin about here. I think that's coming and when we get there then we'll have a lot more flexibility in defining the narrative versus discrete structure.

Colin Buckley, MBA – Strategic Operations Director – KLAS Enterprises

I can say that right now there is a lot of flexibility as we look at feedback that organizations are not forcing physicians to be structured or unstructured they're offering every option under the sun and probably the – it really helps nuance with Dragon dictation and that sort of thing because it's kind of somewhere in the middle, but nobody is making decisions about that right now. The ones that are most successful with structured data at a physician level are ones that are able to do some personalization to the system to make it match their own very personal workflow.

Nancy Stagers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

I would say from a user experience to point to, remember that context and task are important. And so I would look at the context and the task that the physicians do for medications where he just wants to know what they're on but a nurse needs to know the detail of an inpatient, when do you actually give those medications, so the task is different.

And then let some of the designs and performance metrics drive your question rather than trying to come up with a rubric. There are some things that just don't make sense to do structured. There are also some human factors, principles that we can apply like progressive disclosure, so, if you have just a conclusion from a consultant and then if you want details then you can drill down later.

Amy Zimmerman – State HIT Coordinator – Rhode Island Executive Office of Health & Human Services

So, any comments on sort of the issue around variation either – I mean, I've heard that there is variation even with an individual practitioner based on where and how they're recording something could be different across different patients. So, from the point-of-view of where to document, any thought about consistency or variation in that?

Because, you know, if you have the choice of structured or unstructured, and I'm not making up – I'm not saying a position here that one is better than the other, but I've heard concerns about the fact that there is so much choice that the variation in where and how someone documents, looking to you from a usability point-of-view is that good or bad? And certainly from a – trying to extract for quality reporting or measurement perspective or public health perspective it is definitely a challenge.

Art Swanson – Director of User Experience – Allscripts

Yeah, so I think you're absolutely right and –

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Let's remember to say our names.

Art Swanson – Director of User Experience – Allscripts

Oh, I'm sorry, this is Art Swanson again, so you're absolutely right the reality is that with a lot of clinical documentation systems right now there is a lot of flexibility in the templating structure for all the right reasons, right, giving providers the ability to define their level of granularity and their templates and their workflow, however, that level of flexibility also can make reporting a significant challenge. So, if they have unstructured notes that data may be more difficult to get at and this goes all the way back around to that discussion around personalization and customization and making sure that we allow the right level of that so that it addresses all the provider needs but it's not so much that it really impacts our ability to do kind of quality measures and other downstream analytics.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Okay, let's move onto Larry.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

So, continuing some really great comments from both building on things from this morning and fresh this afternoon. You guys touched on some things that we've talked about here and some of the context. So, I was struck when we had our discussion on documentation we talked about this notion of track changes so as people pulled in information, they pulled in all that supporting data that there was a way to know it had been pulled in and then this notion maybe there could be a dial of some kind to say, I only want to see the conclusion, I want to see all the source data so that the user had some ability to say what they were interested in based on the task they were trying to take on. So, maybe some responses about that and then I have some other questions for you guys.

Steven J. Stack, MD – Chairman – American Medical Association

First of all to the point, I think we could standardize –

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Steven?

Steven J. Stack, MD – Chairman – American Medical Association

I'm sorry, Steven Stack, AMA, thank you. We could standardize where some of this information is put and what fields and still preserve the flexibility to have open text for some of those things. As far as your comment, it just blanked on me, what was your question just give me one word?

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

About track changes that we –

Steven J. Stack, MD – Chairman – American Medical Association

Yes, right, thank you.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

We know what information was imported.

Steven J. Stack, MD – Chairman – American Medical Association

Right.

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

Maybe some of the structured pieces and the user could choose –

Steven J. Stack, MD – Chairman – American Medical Association

Right, no I got it –

Larry Wolf – Senior Consulting Architect – Kindred Healthcare

I want to see a lot of detail, I don't want to see detail.

Steven J. Stack, MD – Chairman – American Medical Association

So, having testified not too long ago about cut, paste, copy, carry forward and all that I think if the tool supported the intellectual or cognitive workflow of the physician differently there wouldn't be quite as much of that. I never – I can touch type very well, I never really realized how many physicians somehow got through all that education and they can't qwerty touch type that astounds me. So, for them, some of them they're pecking through all of this stuff, it is very burdensome. I can't imagine that and yet I look around a lot of my colleagues do that.

So, it's a big deal, you know, and for Dragon, it is somewhat good but somewhat not and I was just in a meeting a few days ago where someone use the example where the urologist doctor dictated in Dragon that my prostrate is bothering me and it translated into my prostitute is bothering me and so big difference particularly if your spouse reads that medical record via a portal somehow. So, it's an issue because then you have now not only the original generation but then the subsequent review of the material which is not entirely new to us now.

So, I think that as far as all this tracking it's of more interest to auditors and others than it is to the clinicians. We just want to know is the data reviewed and updated, is it current and I think for the most part if we get these tools a little more usable some of that other issue will go away because the clinicians will be willing to comply with the structure and design of the tool instead of complaining and whining about it all the time.

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

Kevin Fickenscher from AMIA, so, I really agree with your notion that we need to have a more contextual approach towards data review and observation, which is something that Nancy was really talking about I believe, which is, you know, the difference between a family doctor and a nephrologist, and a nurse in looking at the data on the same patient is very different in terms of what they need and yet under the current context it's all data is available at all times to everybody for everything.

And again, I would come back to the notion that a part of the problem there is that we haven't had the interdisciplinary, the interprofessional dialogue and discussion and debate around what should that context look like and how should we manage that and until we do that we're going to continue to have this problem.

Art Swanson – Director of User Experience – Allscripts

And so, Larry, I think your question –

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Art.

Art Swanson – Director of User Experience – Allscripts

I'm sorry, yes, Art Swanson with Allscripts. You know, one of the things that we've been looking at a lot is that as we start to, you know, really integrate data from multiple records and outside systems one of the key concepts is trust and provenance, right, where did that data come from and how much do I trust it. So, as data starts to gets pulled automatically into clinical decision support systems the quality of that data that I'm integrating in my records all of a sudden becomes very, very important to people and so how do you manage the quality of the data and what gets included and what gets excluded when you're integrating from multiple sources I think is going to be a significant challenge going forward.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Let's move onto Wes.

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

Hi, this is Wes Rishel, one of the things I've learned in four years on these committees is that making good policy and good regulations involves the skilled use of blunt instruments and frankly one of the bluntest features of the instruments that really influences the outcome of policy initiatives is the fact that there are certain stakeholders that when they prioritize all of the things they have to do, the things that end up getting done are the ones that have economic benefit for them. Everybody thinks vendors when I say that, but in fact it's true of users too.

In the light of the limitations of what you can do with blunt instruments I've heard several suggestions today, not all necessarily from this panel, my notes aren't that organized, but I'm going to run through them and I just will ask each speaker to say which of these would you pick first to address with a blunt instrument. I like this putting them on the need to choose one. Improved transparency, in other words avoiding developers because there are vendors are self-developers hiding information about their usability by contract or by other blunt instruments.

Process level certification, right now if you're designing a system that's going to go through certain levels of FDA certification, you have to show you used a certain process in the design. We had some good discussion about processes that are relevant to good user interface design.

A plug-in standard library of either widgets little devices that appear on the screen sort of like airplane instruments or perhaps workflows that are somehow maintained in a national repository and are downloaded for use by vendors.

And a public/private consortium of vendors, users, insurance companies, we didn't mention the people who deal with malpractice insurance but they should probably be involved too that would do something besides just put a report on the shelf that actually have impact on the industry. Okay, so among those four, which is appropriate for the kind of blunt instruments we get to deal with? Steve you're nodding your head avidly I'll start with you.

Steven J. Stack, MD – Chairman – American Medical Association

Those are great do all four of them but before you do any of them, I would say recognize that this blunt instrument and I've been on three of these FACAs and I've with you on one of them, Wes, you all are good people doing good work, but you do work that's as good as this process can provide. Before you do any of that take this from 100 percent pass on the test and make it 75 percent so that doctors can say, you know, what I'm going to try to get all 20 but if I get 75 percent that's pretty doggone good. Give credit for good behavior in doing the work.

So, because you're never going to make this perfect no matter how good everyone around this table is, because I've privileged to work with many of you. So, I would first say this should not be 100 percent pass/fail test lower it to 75 percent and then a lot of these other things would be less irritating as individual settings can select which ones they can really achieve and which ones just don't apply as well and do those other four things which are great.

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

And it's Steve Stack, right?

Steven J. Stack, MD – Chairman – American Medical Association

Yeah, Steve Stack who keeps forgetting my own name apparently, thanks.

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

Kevin Fickenscher, I would agree with Steve that we should do all four, however, I think it's been pretty clear from what I've said that I would advocate very strongly that we need to have in place a public/private consortium. I think it is absolutely essential, otherwise we are stuck in the mud. Right behind it –

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

And just –

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

Right behind it I would offer transparency.

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

Just so I understand, how do you think that various parties you describe would willingly send their best people to that or do you think that it takes some kind of blunt instrument with economic force to get them to participate? Thanks.

Kevin M. Fickenscher, MD, CPE, FACPE, FAAFP – President and Chief Executive Officer – American Medical Informatics Association

Well, about 30 years ago I once had one of my mentors tell me, Kevin, you know, in healthcare you've got to recognize one thing it's not the money, it's the money. So, yes, economic incentives are very important. But I do believe that we are at the point, we have invested billions and billions of dollars in the deployment of systems, they don't interoperate, we don't use the standards we have, we don't have usability that is at a level that we would all accept.

I think the time has come and I think people recognize that we need to do this. We need to solve this problem and so I do believe that people would in fact send their best representatives to participate in this kind of environment. I've actually been out talking with all of these various constituencies that I mentioned to try to determine whether or not there's interest and I think people are at the point where they say yes, we need to do something.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

So, let's –

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

Thanks.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Go ahead Nancy.

Nancy Staggers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

Okay.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

And we have to go quickly because we're actually out of time, so go ahead and answer.

Nancy Staggers, PhD, RN, FAAN – Professor, Informatics – University of Maryland

Okay, just like others I would say, yes, all four, but before you do anything where are we going? So, make sure that the vision is there and then public/private consortiums could work but they sound very bureaucratic. So, maybe do a dual effort so you at least come out with some products like some of the standard icons and libraries, and lab displays, and common UI kinds of things that if the public/private consortium, which will take a while to do, doesn't produce products right away at least you'd have something to give people in the meantime. But do the vision first.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Colin?

Colin Buckley, MBA – Strategic Operations Director – KLAS Enterprises

Colin Buckley from KLAS, I have to agree with Kevin I'd switch the order though with transparency first and part of that is biased because that's what KLAS does, but you need to be able to bring something to that consortium and that's a very big pill to swallow, transparency can work a little bit to the time immediately.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thank you, Colin. Alisa?

Alisa Ray, MHSA – Executive Director & Chief Executive Officer – Certification Counsel for Health Information Technology

Very quickly, they all certainly have merit as instruments, right, and could work. I'm reflecting on Larry's comments about that dial and the balance and I think one thing being very prescriptive may end up impacting customer satisfaction or user satisfaction and a lot of usability is in the eye of the beholder. So, I would vote for transparency first, but, again making sure that we had a lot of work around consensus and the vision and what we were wanting to be transparent on and that we're defining it very crisply.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University
Art?

Art Swanson – Director of User Experience – Allscripts

Art Swanson from Allscripts. I finally got on the last question. I think to me – so when I think about any of these efforts one of the most important things to me is sustainability over time, right, so this has to be something that keeps going forever and ever, it can't be a one-time thing because the market is so dynamic, the products are so dynamic that this has to be self-sustaining. So, that's why I lead toward the process level certification is that, you know, this has been proven from a user experience and a human factor perspective over the last 20 years that a really robust user centered design process yields really great products and that's the best way to ensure the continued evolution and improvement of these products over the long-term so that's why I would lean, but again, all four, absolutely.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

John, is there some last thing that you wanted to cover and I might also ask, is it essential Michael, because I can. All right so John starts.

Michael H. Zaroukian, MD, PhD, FACP, FHIMSS – Vice President & Chief Medical Officer – Sparrow Health System

Give me one second please.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Good, good. John first.

John Travis, FHFMA, CPA – Senior Director & Solution Strategist, Regulatory Compliance – Cerner Corporation

I think this pretty well got answered nested inside the transparency comment and the process oriented certification, but I'd like to ask specifically of Alisa, because I know CCHIT has done some thinking on this, we have the certification requirement out there for safety enhanced design, it's there, it's presumably going to remain there. How would you evolve it for 2016?

Alisa Ray, MHSA – Executive Director & Chief Executive Officer – Certification Counsel for Health Information Technology

Well, that puts me on the spot John. You know, clearly we've taken a step it's an attestation-based measure, right? So, I think we're trying to get – with any time you're doing that you're collecting data so I gave you a little bit here today. We could have gone deeper and analyzed some of the summative testing parts of that testing method, etcetera and I'm sure this group and others will carefully do that.

I guess the next step then is to move into a more rigorous laboratory type testing procedure, something more like what Art was talking about, but again I think there needs to be some thoughtful analysis of what we find from the current attestation process and, again, real clarity on the vision where we're going.

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Thank you. Michael you want to make a comment? Okay, well very good panelists, thank you very much I appreciate and it was very informative.

[Applause]

George Hripcsak, MD, MS, FACMI – Department of Biomedical Informatics – Columbia University

Back to you Liz.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

So, thanks to all the panels, a terrific day of information that I feel very confident will inform a lot of recommendations and decisions that we'll need to put forward as advice to ONC. On the agenda it indicates that the Workgroup will meet, however, in reality we're going to meet for several hours in the morning so we won't – and I know you are all disappointed as you don't get to stay another hour and talk, but we'll do that early in the morning about 8:30 and so we, Melissa, we are ready to open to public comment at this point please? Michelle, excuse me, I'm sorry, thank you.

Public Comment

Michelle Consolazio – Office of the National Coordinator

If there's anyone in the room who would like to make a public comment please come up to the table and while you come up we'll open the lines for public comment for the public as well.

Alan Merritt – Web Specialist, Digital Communications Services – 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.

Michelle Consolazio – Office of the National Coordinator

It doesn't look like we have any public comment at this time. So, thank you everyone.

Elizabeth Johnson, MS, FHIMS, CPHIMS, RN-BC – Vice President, Applied Clinical Informatics – Tenet Healthcare Corporation

Thank you and we'll see those from the committee at 8:30 in this room in the morning. Thank you very much have a good afternoon.

Public Comment Received During the Meeting

1. Context Marc Probst's Introduction: Usability is also affected by Clinical Decision Support activities.
2. The comment made that for each new meaningful use criterion added that his EHR has become less usable has a component of the rapid timeline required for development due to the amount of time the government gives vendors to design, develop, QA, test and implement a certified product for our providers to use. (This is coming from an EHR developer.) To implement more rigorous UCD into the development life cycle would be great, and would require sufficient time to incorporate good, extensive UCD. Thanks.
3. Eligible Professionals (Discussion): need to incorporate the issue of "trust". Level of Trust relates to how much information is shared among the stakeholders.
4. Pertaining to the comment that the government might consider a 'virtual national EHR', the government has designed and built 2 EHRs, VISTA & CPRS. But they do not want to continue to use them, but to buy Cerner or Epic. So, the current vendors must be doing a pretty good job.