

**HIT Standards Committee
Clinical Operations Workgroup
Transcript
June 28, 2013**

Presentation

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thank you. Good early afternoon everybody, this is MacKenzie Robertson in the Office of the National Coordinator for Health IT. This is a meeting of the Health IT Standards Committee's Clinical Operations Workgroup. Other Workgroups have also been invited to listen in but I will be taking the roll call for Clin Op Workgroup. This call is a public call there is public comment on the agenda and the call is also being recorded so please make sure you identify yourself. I'll now go through roll call. Jamie Ferguson?

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Here.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks, Jamie. John Halamka will be joining later. Donald Bechtel? Chris Chute? Jeremy Delinsky? Floyd Eisenberg? Martin Harris? Stan Huff? Kevin Hutchinson? Liz Johnson?

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

I'm here.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks, Liz. John Klimek? Becky Kush? Kim Nolen?

Kim Nolen, PharmD – Medical Outcomes Specialist – Pfizer, Inc.

Here.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks, Kim. Marjorie Rallins? Wes Rishel? Cris Ross? Joyce Sensmeier? Dan Vreeman? Jay Crowley? Marjorie Greenberg? Clem McDonald? Nancy Orvis? Terrie Reed?

Terrie Reed – Food & Drug Administration

Here.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks, Terrie. Karen Trudel? And ONC staff lead Farrah Darbouze?

Farrah Darbouze, MPH – Program Analyst – Office of the National Coordinator

Here.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks, Farrah. Any other ONC staff members on the line?

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

I said I was here when you called, Clem McDonald, but you didn't comment so I'm not sure whether you heard it?

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Oh, didn't hear it, thanks, Clem.

Ellen V. Makar, MSN, RN-BC, CPHIMS, CCM, CENP – Office of the National Coordinator

Ellen Makar.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks, Ellen. Okay, I'll turn the agenda back to you Jamie.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Great, thanks very much. So, this is a continuation of our previous discussions on image sharing for Meaningful Use and so I'm delighted that we have additional presentations on the RSNA Image Share methodology and pilot from David Mendelson and Keith Dreyer today. And what I'm hoping is that we can take essentially the first half of this call to go through those presentations and the second half of the call to continue our discussion on use cases and delineate really the minimum set of use case scenarios that we want to focus in on for initial recommendations.

Then in terms of just framing the overall process then I think that we will have to have additional Workgroup calls to examine alternative methods and standards for that range of use cases and so that's the general method that we've outlined for this process. Are there any questions on that or is there anything else that we need to have on the agenda for today? Okay, hearing nothing I would love to turn it over to I think David you're going to go first?

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Yes, thank you, Jamie I'd be happy to present to you. I uploaded two slide decks and I think the first one I'd like to go through very quickly is the one labeled image share screen shots if you could put that up, that will give a quick sense of what the application is that we build from a consumer perspective for those who haven't seen it in the past. I'll go through that quite quickly you'll understand what we built and then the second slide deck is a little bit more of a discussion of how that project arose, what it has built and what it is headed for and put into the context of potential image sharing use cases.

And then I'll hand it over to Keith who is certainly a project ally here, helped build this, actually one of the thought leaders behind it and he may give you some thoughts about putting this into perspective of Meaningful Use. So, if we look at the screen shots, if you advance to the next slide.

This is built as really two parts as far as the consumer is concerned. If the patient, consumer, is standing in a radiology department and is aware that they have a need to take their images outside of that department today that's most commonly achieved by giving them a CD. We offer this where this is live and it is in production as an alternative. And it was built so that the equivalent of a clerk in a radiology department could sit there with the patient and use an application local to that department and package the necessary exams so that they go out to the cloud, they sit in a clearinghouse, really the patient doesn't see that, that is transparent to the patient. The patient is given instructions to go home and download them into an image enabled personal health record account that is run by participating vendors.

So, the first screen you're seeing here is the application within a radiology department, it's basically a login screen for the clerk to login into, if you go to the next, okay at this point the patient would identify themselves either providing their name or medical record number that is the medical record number pertinent to that local venue and that's entered over here, if you go the next screen, having entered that basically you'll see MRN there is a sample MRN over there, the patient name pops up, there is the ability to confirm that, you can see this brought back at the bottom of the screen one patient the last name is Test, obviously this is test data that I used, it confirms the patient's name, their medical record number and their date of birth.

And at that point you could click select, and if you go to the next slide, it brings back the equivalent of the patient film jacket, if you will, the historical film jacket and it shows everything that's available in that imaging department that could be sent out into this system and on the left you'll see we have the words "add to cart" we kind of really built this to reflect a consumer notion of shopping if you will thinking of Amazon, it's the clerk and the patient nobody more sophisticated than that.

And so the clerk with the patient would sit here and check off the relevant exams that the patient wishes to put out into their personal health record and if you go to the next screen, all right having done that, so they've clicked off a few things over there, they now come to a screen where they will enter a password, so the password is derived by the patient, you can see we have a checkbox there, so you can see the password or it can be replaced or by wildcard and that's up to the patient if they wish to expose the password to the clerk sitting next to them.

Currently we optionally capture a patient's e-mail address, we have plans to make that a more rigorous capture in the future and I'll talk a little bit about that later on, if you go to the next screen, once the patient has entered the password they're presented with this screen, which is actually printed and I'd like you to think of this as the equivalent of the ATM card you're carrying around in your wallet or your purse, it has your name on it, it has your birth date on it, it has what we refer to as the RSNA token, that's an 8 digit arcane alpha numeric, think of that as the equivalent of the 16 digits that sits on your ATM card or a charge card and it gives the patient a space to write in their password if they wish to. We figured some people would like to write it down other people would not. We don't print it automatically.

The patient is given this piece of paper, a set of instructions and said, go home and login into some of our participating vendors, currently there are two active participating vendors one is Dell and one is Life Image, so one large vendor, one small vendor. We have two other vendors who have just contracted with us to join and offer PHR services to patients.

And if you go to the next slide I'll quickly show you what the patient sees when they get home. So, I have screen shots from both of the active vendors. This is Dell, so this is the initial screen, the patient is given a URL, they go to that URL, they basically enter their e-mail address and they make a password or they can enter the token that we give them, excuse me, go to the next screen please.

If this is their first encounter they'll come to this screen where they would enter the RSNA ID that 8 digit token and the password or PIN and again this is all explained to the patient on instructions that they are given if they're a little confused and you'll notice the tab says import documents. After they've entered the appropriate information they click search, next screen please.

They come back to this screen that gives them a list of the available documents sitting in our cloud clearinghouse, they check off the ones they wish to retrieve. Next. And those documents are downloaded and there is a series of other screens I'm not showing you here that would let the patient spawn a zero footprint web viewer. So, this is a PAC viewer that's pretty functional most radiologists would find most of the tools that they use to look at different examinations available on this. Any place that the patient is standing that has a web browser the patient can spawn this and show their own images.

If you go to the next slide I'm going to show you a few other functions that are available, they can trigger the report so they can show the report on the web browser, next screen, please. Okay, this is the other vendor that is live right now, these are screen shots from Life Image and I'm using these to show you a couple of other functions.

In the middle column there is an inbox and both vendors have different flavors of this but the inbox here basically shows their list of exams and if you click on a given exam in Life Image you see these thumbnails that represent the different series of a cross sectional MRI here, this is an MRI of the knee.

You'll notice there are other tabs up here, there is a viewer tab, a documents tab and a sharing, and a download tab, this reflects the functions that we demand that each vendor have in place. So, if you go to the next screen, again, there is a full function viewer here with most of the tools that most clinicians and radiologists would find in their PAC systems today. Next screen.

Okay, now we wanted to enable patients to share their images without being physically present. So, on this screen you're seeing functions where the patients can identify anyone, usually a provider, where they'll enter the provider's name and e-mail address. You'll see there is a space for the patient to enter their own phone number so the provider can contact them for further information, but at the end of the day they enter all that information they click share and an e-mail with a URL that authenticates the provider is sent, the provider can use that URL to basically look at the patient's images without the patients being there.

If you go to the next screen, I'm sorry that was not – that's not my presentation, but let me just talk through that, let's go back to the one we were on, if you go back one, okay right here. What happens is there is a screen available to the patient where they can see everyone they shared with and they can remove the ability for that person to examine their images if they so choose to terminate their relationship with that provider.

The last piece of this is you'll see a download button on the top right hand corner there that would enable the patient or the provider to download the full DICOM data set so that everything is available in the local environment without coming back onto the web. So, if a patient was moving their care from my hospital, Mount Sinai, to another hospital for surgery on their knee perhaps in the New York area and the surgeon wished to have the full DICOM payload downloaded and available in their local PAC system that functionality is enabled, that's true both here with Life Image and it's true with Dell.

Okay, I would be happy to answer any questions about the application or we can jump into the other slide set which is about 10 slides that would just set the context of this project.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

This is Clem McDonald, can I just ask about the – you mentioned that the PHR vendors are required to be able to use this application, do they have to buy it or is that something that's available to any PHR vendor to install?

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Okay, so this was developed through an NIH contract, the edge server application, and it's still done – that application is available as an open source solution to anyone who wants to download it and provide it.

The functionality you're seeing here is usually proprietary to each vendor with a caveat that it has to use the XDS standard for the transactions between the clearinghouse and the PHR vendor. So, the PHR vendors have built their own user interface, if you will, in each case that's why it did look a bit different, but to enable them to retrieve the image set that they have to use basically the IHE XDS standard transactions.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

What about the viewer though? Is the viewer also available for downloading?

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

The viewer is not our viewer, in these two cases these were viewers that were built by the individual vendors. We have not built our own viewer for this application, although there are many viewers available, many are available as shareware free but we're not providing the viewer.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Okay, but you mentioned you had this lightweight viewer so that miscued me.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

I'm sorry; I'm not sure where you saw that or if Chris had mentioned that.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

No –

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

There is a definition in IHE, there is another profile where the set defines a basic viewer and what it should have but we're not providing the viewer itself.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Okay.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Okay, if we jump to the others slides that is just labeled RSNA Image Share. Okay, great, what I put here a little screen shot from the Wall Street Journal, we got a little publicity about 2 months ago and it was all quite favorable, it wasn't just directed at the RSNA Image Share that was one of two examples that were cited, it was an article just talking about image sharing and it was just positive in so many respects and there was a – the Wall Street Journal runs a web series every day with a little video and their reporter was on and again, very favorable comments almost too extreme, they said "call you doctor and ask him why he doesn't have this." So, it was interesting at least in that venue there was a lot of good feedback that patients want this. If we go to the next screen.

Okay, I knew that some of what you wanted to discuss today was use cases so the people I worked with, which is about a dozen people in the RSNA and the ACR who really put together this project we've spent a lot of time discussing these use cases so I've given you my list over here which tries to be fairly inclusive, I'm sure there are others we can think of, but it really includes everything ultimately from enterprise to enterprise, to every which way a patient would interact with clinicians, with radiologists and with enterprises and at the bottom you'll notice I've listed research use cases and regulatory use cases. So, there are a lot of different reasons to share images some are, you know, more common than others obviously. Feel free obviously to come back to this. Next slide, please.

Okay, I listed the standards that we've employed that we at least in the radiology community think are most relevant to image sharing no matter be it this PHR model or a more conventional HIE kind of model and so DICOM and HL7 are certainly the mainstay of most of radiology today.

I listed Direct here because I think that there are certainly places where Direct is going to be used a lot and there are places where sharing images versus Direct will work. I don't think it works in every use case, but I do think it works in several.

And then for us the IHE XD family of solutions in terms of standards is what we built our solution on and we built it with the vision that the PHR is one use case and we kind of envision that converging on a common infrastructure, if you will, a national highway where if everyone observes similar standards you could have an HIE solution living on the same highway the PHR solution lives on and we think that's pragmatic and it represents an attempt at cost conservation and it brings down the price by converging everybody on one family of standards. Next slide, please.

Okay, I listed over here some of the web services which are really IHE profiles that could live side by side with Direct and be wrapped into Direct solutions so those are XDR and XDM and again these are all fairly new profiles but they were designed to be able to take some of the other IHE solutions and transactions and make them usable in the Direct world where that was the best solution. Next, please.

Okay, here's basically a summary and the genesis of this particular RSNA Image Share Project. So, it basically came to light in 2009 when HITECH dollars were made available to the NIH and we responded to an RFP and the RFP specified image sharing, standards-based and patient engagement those three things.

And so, in fact this group at the RSNA and ACR had spent the last two years kind of discussing issues around the CD as a sharing mechanism and we were always discussing how we could replace that with the Internet and ultimately dollars were made available and we went ahead and said, okay let's do something with consumer control, it simplified the consent model because once you put the images in the hands of the consumer/patient and the PHR they control distribution from that moment on you need a lot less in the way of consent.

It scales down the number of visit associate agreements that are needed, in this case it's a business associate agreement between each individual radiology department and the clearinghouse, but you don't have to go enterprise to enterprise. We decided our answer to standards were the IHE profiles, so we were trying to bootstrap an IHE-based network and in fact our goal was to begin to move vendors who often had nice proprietary solutions but they were proprietary and none of them could interact, we would try to move them to a set of standards.

We learned very quickly that our biggest challenge was not technical but was security, confidentiality and HIPAA and this was initially built by five academic institutions but we're in the process of spreading this outside the academic world right now. Next slide, please.

All right it's still very much on a banking model and the metaphor, which I guess is a fairly common metaphor, picture the bottom of the screen where the patient standing with the provider is an ATM machine, picture the top community one, community two those are really your radiology departments we picture that as banks holding your money. We put a clearinghouse in the middle, we said, boy money can pop out anywhere in the world in a matter of seconds with a card with a token and a password let's do the same thing, we created a token and a password system and the images can pop out where the patient is standing with the provider. So, conceptually it's very much along that model. Next slide, please.

The elements of this are the edge server that sits between, at the radiology department in the cloud, so it's the edge server, actually there is a buffer between the cloud and your PACS and your RIS system where we get the report. There is a clearinghouse, we contracted that, there was a competitive contract about 10 or 11 groups responded to it, in this case Life Image independent of their PHR product won the contract to run our clearinghouse and it's an XDS-based solution. And the last element is the PHR and that is all vendor-driven at this point. As I said we have a set of specifications but vendors can apply to participate with us and we will be up to four vendors shortly. And let's go to the next slide.

All right, so we think the current advantages of this particular model, it's a push model that's made HIPAA offices delighted, there is nobody coming into the firewall, if the patient sits in our department, our offices and says I want this out there we encapsulate this, encrypt it send it out to our clearinghouse. We've exposed the entire DICOM data set; we think that's very important that is the major enabler of radiology. We've exposed the report.

We know that many physicians at the end of the day don't really care to see the image, if they have the report they're happy. There are others that need the report. There is really a spectrum of users out there. We can send the historical exams and again the consumer in this case had total control of the flow of information. I put the little question mark we often debate how our colleagues feel about the consumers having their information, but that's a philosophical debate, we've made it possible in this case. Next slide, please.

Okay, so just to give you a summary right now. So, we have 4 academic sites that have been live for a year and a half, they've enrolled 3,900 patients. It turns out when we looked at our data 1/3 of those patients at the end of the day have closed the loop and downloaded their images into their PHR. We don't have a notion of what they do with it once it's there, at least not in terms of Direct data.

We have sent out surveys to patients, we have about 300-400 surveys back indicating that patients have used it and for the most part, we haven't gone through that data formally, but for the most part it's pretty positive. Of course it's a self-selected group, people who are using this are people who probably want it or need it.

But their overall response has been positive we maintain a 1-800 number help desk, so we do know that sometimes people have trouble and we're helping them through it. The largest consistent problem, and it's not a large problem, is interestingly when patients want to share their images via e-mail with their providers their providers seem to be unwilling in some cases to share their e-mail address. So, that's kind of interesting to us, it's a problem, I guess we kind of had in the back of our minds but we didn't understand the scale of that problem.

Last week we brought three community sites live, so not academic practices, and we're really interested to see how this is embraced at those sites. They are fairly large multi-site practices in each case. So, we'll have more data coming in, in the near future. Next slide, please.

Okay, I just summarized patient responses over here, again some favorable, some problems are identified, next. Okay, quickly I'm coming to the close here, but so, we keep on evolving the solution and we know what we built isn't perfect it can get better. So, version 3 is what we just released two weeks ago and we made that available to vendors and vendors have expressed interest in basically taking our application and building their own edge servers and incorporating our application into other applications they offer radiology departments.

We are working on version 3.1 and what we'd like to do is make this look a little bit more like consumer applications. So, right now we're using that 8 digit token that's fairly arcane as a logon ID. We'd like to offer at least an alternative to use your e-mail address as a logon ID and we're going to make that only as an alternative, we feel at some places, different offices will reject that and want the 8 digit arcane token, and we're also going to begin to structure our password to have a minimum of 8 characters going forward.

Right now the solution, when we first released it, required a 72-hour delay from when the patient said they want this to when it was exposed, the theory being that we didn't want the results to get to the patient before it got to their doctor. We're going to make that user selectable because there are a lot of different uses cases some people may want it earlier, some people may need it urgently, so we're going to make that choosable at the time the patient asks for the service and we expect to release this late summer.

In the future there are a lot of things we'd like to do with that edge server but one of them is include dose information that could be incorporated into what we send out to the PHR so that patients could basically begin to build their own little dose profile and we might be able to use the edge server for some quality metrics in the world of radiology as well.

It's interesting, if you think about this, we built this just for imaging at this point in time, but you could use this by the way to basically encapsulate any kind of information you want including a C-CDA or something like that, so just food for thought. People could build untethered longitudinal records in this system if they wished to. Next.

Okay, and basically I started out by articulating some of this but our project is financed to not only expand our network, which is what we're busy doing right now, but we want to reflect changes that are quickly happening in the world of DICOM so the way web services are implemented in DICOM is quickly changing and one of the things that's happening is right now pixel data and metadata are intertwined and evolving DICOM, actually I think it's already been approved.

There are ways of separating the metadata which means you could expose a lot of patient information without necessarily worrying about transporting the pixel data itself unless somebody wants to look at the image. So, we can picture the world of the EMR just looking at the metadata and then the clinician making a decision if they want to spawn a viewer and look at pixel data.

And the last thing is, again, we don't see this as purely a patient engagement move, we think that there is a way of converging a variety of different solutions including the patient engagement model with the HIE model, provider to provider models, NHIN Direct, etcetera, again in a very cost-effective efficient fashion on a single platform national highway observing one set of standards. Next, please.

And this is my last slide, which is just if you want further information on the Image Share Project itself you can go to these websites. So, I thank you for giving me the opportunity to present this, it's a lot of information to digest, but be happy to listen to what Keith has to add and answer any questions.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Thank you so much Dr. Mendelson I really appreciate the presentation here and the additional detail. But, what I'm going to suggest is Keith if you're on the line if we could go ahead and cover your slides on managing image exchange in Meaningful Use and then go into the discussion from there, and so hold discussion on this presentation for a few minutes here. Is that okay?

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

That sounds good.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Okay.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Okay, thanks, Jamie, can we bring up the first slide of mine? And just a quick introduction, so I'm Keith Dreyer I'm the Vice Chairman of Radiology at Massachusetts General Hospital, the role that I'm going to have today in this presentation is as the Chair of Informatics at the American College of Radiology and in that position we see a lot of feedback coming back from Meaningful Use of our members, radiologists, in trying to comply.

One of the challenges that's come recently isn't really a measure or objective that's put on the radiologist but in Stage 2 this imaging results outcome which requires certified EHR technology to receive over 10% of the imaging results that are coming from the ordered images from that EP and so next slide.

When you're inside of a hospital it's pretty straightforward to be able to connect the radiology department to the patient's access mechanism such as their EHR. Outside of hospital settings when this activity takes place it's a little more challenging. So, in this example here I've got multiple ordering physicians at multiple physicians, multiple EPs at one of those facilities ordering exams at multiple imaging provider facilities some of which will be compliant with Meaningful Use and will have certified EHR technology and some of which won't.

But the challenge here is to be able to – generated at location A over to a facility where the exam was ordered to that EHR at location B. And there are different ways to do this but they're all novel and they're all challenging for the industry today. So, let's go through the 4 if you can put up the next slide. I'll just talk through these.

The image exchange solutions that are being explored and somewhat exist today and this is really going to be required as an optional measure in 2014 but it's interesting the wake that it's created in the push for vendors to be able to provide these solutions and the challenges for the imaging providers of the facilities to be able to comply with requests coming from the ordering physicians because their CIOs or CMIOs are pushing them toward this objective.

So, one choice would be to have images transferred directly to and stored by the ordering facility, as you can image there are challenges with that because most EHRs by themselves don't handle the storage of image data and most ordering physician facilities don't have the capability of storing DICOM data.

The second choice here is images are available inside of the providers CEHRT so basically the radiologist can have not only their CEHRT solution which doesn't perform imaging but also has the images available inside of their PAC system and then they can make links directly available inside of their facility, inside of their EHR.

So, let's say a group of 10 radiologists would create images for hundreds of physicians they'd need CEHRT themselves to be compliant with Meaningful Use and they can also make their images available inside their CEHRT and under a package solution they can deliver that up to the ordering physicians so the physicians can see the images that they've ordered inside of CEHRT that has additional information for that patient.

The challenge there would be that there would be two separate CEHRTs that the ordering physician would have, one that would contain the bulk of the information on their patients and the other one that would have additional information from the perspective of the imaging provider including that imaging information.

The third choice would be images to be available by links between the CEHRT of the ordering physician and the image provider, so basically the images could stay in the same place at the imaging provider facility and then it would have a link set back based on the order of the exam when the exam result was available it would send a link back to that ordering physicians facility where the EHR would hold onto that link and then the link could be pulled up and there are issues there with security and access, but a lot of that technology exists today not in a concept of an end-to-end but a one-to-one or point-to-point do exist today.

And then the fourth choice would be similar to David's presentation where if you had the health information exchange of a location aware of images then the physicians could use their CEHRT to have access to the HIE. So, in Massachusetts and several other states the HIEs have found partnerships with image sharing providers that can extend their health information exchange from text data into image data and then they can make that available to physicians that are compliant with participation in the EHR program.

So, I just wanted to talk about the challenges that we have already in place from Meaningful Use as it was in Stage 2, many of these solutions would be the solution if we were to go in Stage 3 or future stages to allow access for patients to have or requirements to have patients to have access to their image generation.

And then just as a final note, again there was a survey that was done – I'm on a medical advisory board with Carestream and they did an independent survey of 1000 patients with a group called IRD Medical and I'll share that with you folks after the call but just to give you a quick synopsis it was 1000 patients of all different demographics and there was some concern, this is what wanted to be tested, was what was the perception of patients of different ages, of different IT backgrounds and so just a quick summary is that age we found has little effect, and this will be an article coming out from the ACR, age has little impact on the use of and desire to use a portal and didn't drop off until the age of over 71.

Even those that classify themselves as basic IT users would prefer and want to use a portal. Higher exam frequency, the number of exams a patient has per year doesn't change the desire for a patient portal. In the survey 8% of the patients stated that they had to retake an exam because their priors were not available and overall 83% said they would definitely use a portal while the remaining 17% were concerned about security. So, I'll stop right there and thank you very much for your time.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Thank you so much I really appreciate that discussion.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Sure.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Let me just first ask the members of all the Workgroups on the call for their comments and questions?

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

How bad is the problem, I mean, you said these are challenges can you solve it and if so how?

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Is that directed to me, Keith?

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Yes, Clem McDonald, yeah, I mean, I'm Clem.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Okay, Clem, there are ways to solve the problem and some of it is getting the EHR vendors to work directly with the PAC vendors to allow for incorporation of these links and then to manage some of the security. As David mentioned some of the more recent DICOM Working Groups have released some standards that allow this to happen more easily with the ability to almost have like Napster access to images with security in place.

I also think that the other method to do this is the pick and shovel, make the images available inside the HIE – HIEs and then it solves the problem, kind of a spoke and hub solution which is also taking place. So, I think, you know, as I had explained to groups in the ONC before, you know, we just have to put this in place and I think it was a good choice to have this as an optional menu item in Stage 2 because it's kind of woken up the masses. The solutions are there we just need to have pull through from the vendors, have the members participate and pull to have access from the vendors. So, I think it can be solved today but I'd like to see more mainstream solutions in place.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Is there any – how much interest is there from practices wanting to pull the images, at least the plain films, chest x-rays that they might –

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

From the practices, I'm sorry the ordering?

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Yeah, it wouldn't be that hard to store plain films and manage them.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Oh, for storing images. Yeah, the problem is though it's not so much the size of the images because you can compress them quite a bit I think it's just the management of large amounts of lab data, right, that doesn't have a place for it. I haven't seen too many EHR companies, and there may be some people during the public opinion section, but that have directed towards solutions where they have images stored in and most institutions today have separate vendors for PAC systems as they do for EHR vendors.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

So, this is David, I just wanted to add that what we're seeing, at least locally, is who asks for the PHR solution are generally patients with cross sectional images. So, those are the patients who tend to be sicker. So, patients aren't necessarily interested in this as just a curiosity, they're interested in it when they have a need and they want to facilitate their own care and they know that right now we have a bunch of bureaucratic hurdles in place that move all kinds of data around. I'm sure this group is well aware of that.

So, this is a way that some of them have said it just simplifies their life when they have a significant health problem and it just expedites moving things around and so the demand, at least as I see it, is yes it would be nice to have everything there including your simple plain films but the bigger demand seems to be the cross sectional images both MRs and CTs.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Well, I just – because physicians have historically wanted to have all their own stuff and if they've made a decision based on it or want to compare it – would I have assumed that that would have been their preference. The cross sectional ones are harder for them to manage so that's why I focused on the plain films.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

You know, I can tell you –

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

So, I got it.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Yeah, I can tell you that physicians probably would prefer to have all their data but just the cost would be exorbitant even for, as I said, even for plain films I think it would be high just from the management component. The other thing that I would add we import CDs so patients come to the hospital at Massachusetts General bringing CDs and we had no idea how many people were bringing how many CDs to our thousands of physicians.

Just to give you a scale, we do 750,000 exams a year where we perform imaging exams at Massachusetts General. We bring in over 100,000 exams per year from the outside of patients carrying CDs into our facility. So, it's much larger than we ever expected it would be.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Really? Wow.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Yeah.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

The same is true actually for Mount Sinai, so if you figure we have a staff of about 700 full-time physicians we are importing – we started out small 2 years ago, we thought we were importing about 10,000 this year we are on pace for 84,000 exams, the imported.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

Well, it just shows that you guys like to have your own exams on site though too.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

We had tried that –

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

You know, I think –

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Imported a service we're not – in fact it's really a loss for the radiology departments because we're not performing those exams but it's sort of a best practice to the institution.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Right and what's happened today from what we've seen is, you know, our neurologists, neurosurgeons, orthopods, oncologists are the ones who want to try and keep these images because it's not just the images that are coming in from us that they need to manage and so we have a cloud-based solution that they use independent of our facility where they can bring these images in and store them and that seems to solve their problem.

Susan Hull, MSN, RN – Chief Executive Officer – WellSpring Consulting

Yes, this is Susan Hull I'm a member of the Consumer Technology Standards Workgroup I didn't announce myself earlier, but I think this is an interesting use case of the need – that really sort of points to the need that consumers have particularly those who have complex issues where there are, you know, changes in images over time are important and they're getting, you know, images done in different locations for critical referrals and processes.

So, I think the import as a service in the idea of the image bank or for the local HIEs or other ways to think about this so that each, you know, health system organization isn't creating images of services but we can do some more regionalization or centralization of that as a service would really be of help to consumers.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Yeah, I'd like to point out that we haven't firmly established an economic model although we're going to begin to examine that, but just in the course of conversations with some of the vendors in this space whether it's the radiology office, the patient or the payers ultimately who pay for building these PHR records, if you will, it's not an exorbitant fee. I suspect that the number is probably, the realistic charge, is probably about a \$1.00 per gig of data and that's a couple of CTs today and so there is probably an economic model that is pretty reasonable for reducing redundant exams and aggregating the data to make it easily accessible to the patient at a pretty reasonable cost in the long run.

Susan Hull, MSN, RN – Chief Executive Officer – WellSpring Consulting

But this is I think, this is Susan Hull again, I really concur with that and I noticed on the CMS innovation grants this was one of the topics and thinking about what's not only, you know, a consumer facing solution but what's an economic model that could really save significant dollars. This is really a high value and perhaps a cost bending solution.

Leslie Kelly Hall – Senior Vice President of Policy – Healthwise

Jamie, this is Leslie Kelly Hall could I ask a question also?

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Yes, please, please.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

So, hi guys, this is Leslie Kelly Hall I Chair the Consumer Group and this is really exciting to see this come together and I applaud you for your harmonization efforts with existing standards, and as we see emerging in the consumer area the Blue Button Project or the Blue Button Plus that allows for pull in the future is going to provide tremendous opportunity for patients and consumers and I wondered have you worked with or do you consider working with the Blue Button Plus Initiative for pull so that we can use your use case that you defined to help to inform future standards and use of the Blue Button for image exchange in pull, that's one question.

And then I notice you did mention the use of Direct and would like to hear more detail about that and lastly, my experience as a former CIO and provider of images to patients at a hospital, we also had great benefit with just simple PDFs of standard x-rays and I didn't see that as part of your options. So, those are three questions I would love to hear.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

This is David I can at least start to address some of that. So, the RSNA Project itself is not Blue Button enabled at this point although we're aware of it, but one of the two vendors has enabled their service, their PHR service or are in the process of doing that with Blue Button, again, so we're trying to partner with industry here to promote observation of standards, set up a pilot model, so right now my answer is there is some interest in Blue Button as a solution and it's coming from our vendor partner.

Direct, we are just again – we're pretty focused on releasing our current solution but Direct we seem – we're just watching what happens and as Direct gets adopted it seems to me that we have to address it as we do our own development work and that's why you saw we're at least having our technical team that's funded by the NIH here begin to look at how we can migrate some of our services in that direction.

And I think, I'm sorry, oh you asked about PDFs, I'm going to take the stance of radiology here right now which is that there is a reason why DICOM has developed and evolved over the years and that you never know what the use case is going to be for your image and that the value DICOM brings is you can really do a lot of things to manipulate the image as needed.

If we can come forward with an effective transport mechanism, which we think we've done here, and reasonable archive costs we think we're doing the patient a favor by maintaining availability of the DICOM data now that's not necessarily what's coming across in the web viewers.

One of those web viewers was built on flash the other I'm not sure what the technology was, but they have the DICOM data set sitting in the background, they're not always exposing that, so they are taking advantage of all the web technologies to just move things quickly when needed.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

So, that sounds great that you've got the best of both worlds I don't have to have complex software as a consumer I can view it, understand it, move it someplace and then the DICOM information is available to the provider as needed if I understand you correctly.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Exactly, yeah, you've got it exactly correct.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

Okay, great, all right, super, thank you very much.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

The way think through I think where the world is headed for an image visualization is that everyone knows that you have to get toward this zero client, this thin client that can be viewed anywhere, similarly you can download a movie off of Netflix or something, right? And so all the vendors are headed in that direction and knowing that the next requirement is going to be to have patients have access to their images directly it's interesting you can go through PHRs to do that.

However, most facilities today that are providing access to patients, and there are a number that already are, have secure ways to be able to have those zero clients directly from image facilities to those patients directly over the Internet. So, that capability is there today, it's just the challenge that I discussed in Stage 2 is trying to integrate that into a foreign EHR but giving direct access is easier.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

Right, so, thank you very much I just had one other comment and I think your exchange numbers are absolutely dramatic to have 100,000 of your 800,000 images actually coming inbound and I think attaching a dollar figure that was even modest that reflected the ability that you didn't have to repeat that test would certainly pay for the dollar costs of storing it and as hardware gets cheaper and cheaper, and cheaper that dollar amount is going to go down. So, I just applaud your efforts and encourage you to put the real dollars associated with the savings you provided in the repeat tests as part of your presentation. Thank you.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Thank you.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

And of course radiation exposure.

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

Exactly right.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

I'd like to add one other thing for this group to consider in the EHRs now that EHRs have their own portals for patients another thing to consider would be can the patient expedite the export of their information into an untethered PHR when they wish to without the intervention of either the radiology department or the clinician.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

We would love to see that in view, download, transmit. We would love to see that imaging as part of that requirement. I think you've laid out a good way to do that having that under the brand of the Blue Button as a standard would certainly go a long way and I think there are opportunity for collaboration across that standard.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Yes.

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

This is Clem McDonald, there is a percolating probable regulation for laboratory results that would have to be made available within a certain time period to patients and that could also – one could imagine that same thing would be applied to radiology images.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

So, is there a CLIA equivalent in radiology?

Clement J. McDonald, MD, FACMI – Director, Lister Hill National Center for Biomedical Communications – National Library of Medicine

It is a CLIA, no, well I don't know about radiology, but this is a CLIA thing and I don't think it's out yet so I can't say much more.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

However, it would apply to pathology and so that could help to promote this use because many of the pathology systems are using the same DICOM standards.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Great, well, thank you, this is Jamie; I do appreciate the questions, comments and discussion. What I'd like to do is we only have a few minutes left on this call, I would like to get back to at least a brief discussion on the use cases and I wonder if we could direct the slides back to slide number two of the deck where the title I think is just image sharing.

M

Right.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Where the, yes in this one, and so I think in our previous discussions in this Workgroup we did not differentiate between clinician to clinician and radiologist to radiologist we just called that all clinician to clinician sharing. We also – we did talk about both the radiology to patient and patient to clinician, and patient to enterprise cases, but I think instead of enterprise to enterprise what we had talked about was sharing among a care team which would be essentially – so within an ACO for example or within a community and so I think that it may take perhaps multiple of these to fit the ACO if I can use that term, the Accountable Care Organization use case, and I wonder David and Keith if you've thought about this in the context of sort of an ACO care team sharing?

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

You know, my take on that is I would suspect that that ACO would probably have almost like a private HIE, Health Information Exchange, that they've created across their facilities, non-imaged based and if that's the case then there are, in the creation of these image-based solutions that can tie to HIEs that can provide these kind of solutions that support the framework of the Image Sharing Project from the RSNA.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Yeah, I agree with Keith about that. That network would probably use the more conventional HIE model and just extend it to imaging at that point in time.

Russell Leftwich, MD – Chief Medical Informatics Officer - Tennessee Office of eHealth Initiatives

I don't – this is Russ Leftwich, I don't think many ACOs are in a position to create such an entity, certainly not the ones that I work with in Tennessee. I've been in fact talking to them about using Direct because they don't have that capability of creating an HIE.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

It's interesting I'm actually attending a meeting in New York State, the Health Association of New York State, where yesterday we held an HIT Forum and the discussion was – the whole afternoon was HIEs and private HIEs in particular and there was a representative from KLAS here and he was talking, you know, but he sees that as the emerging market, he's not sure the technical solutions are robust enough at this point to really be considered excellent, but he kind of alluded to that that marketplace was where a lot of the HIE vendors seem to be targeting their effort and making sales at this point.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Just to clarify, I though Memphis has got an HIE in Tennessee isn't that correct?

Russell Leftwich, MD – Chief Medical Informatics Officer - Tennessee Office of eHealth Initiatives

It's very limited, it's emergency departments and safety net clinics and it isn't – it to my knowledge has no plans to create a more community-wide HIE that would serve a function like this.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

But I thought it had all the big hospitals in it.

Russell Leftwich, MD – Chief Medical Informatics Officer - Tennessee Office of eHealth Initiatives

It does in terms of that limited relationship of the emergency departments and the safety net clinics. There are no other ambulatory providers across the spectrum in that HIE after 5 or 6 years.

Susan Hull, MSN, RN – Chief Executive Officer – WellSpring Consulting

This is –

Keith Dreyer, MD – Vice Chairman, Radiology – Massachusetts General Hospital

I was going to say real quick the solution that we have that brings those images in those hundred thousands of CDs that come in also allow us to connect to other hospitals without the generation of the CD. So, if you needed to construct an ACO solution over disparate enterprises where you didn't have an HIE you can create essentially an HIE communication mechanism for images alone, but I would just think that somebody that was going to do that would probably also want to move the rest of the patient record data as well.

Susan Hull, MSN, RN – Chief Executive Officer – WellSpring Consulting

Yeah, this is Susan Hull, I think there is an interesting use case when you talk about the care team collaboration it's kind of a multi-point collaborative care conference that uses images, a common image, whether it's from the bank or whether it's from the HIE or other mechanism to actually conduct a collaborative care conference so that the image is virtual, the players are virtual and the patient could be included in that. So, it's another spin on that use case, but I think that there could be some interesting innovation around that that could help facilitate and lower the cost of using the images in that way.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

That's great, now, you know, I really enjoyed this conversation and I'm sorry to say that we're out of time for this call and so I'm afraid we're going to have to cut off the discussion there and see if there is any public comment and then move this to a next Workgroup agenda.

Public Comment

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Operator can you please open the lines for public comment?

Rebecca Armendariz – Altarum Institute

If you would like to make a public comment and you are 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. We have no comment at this time.

Jamie Ferguson – Vice President, Health Information Technology Strategy & Planning – Kaiser Permanente

Okay, I just want to thank everybody very much and particularly Doctors Mendelson and Dreyer for participating here with us today as well as the members of the Consumer Technology Workgroup and look forward to continuing this discussion. Thank you.

David S. Mendelson, MD – Professor of Radiology/Senior Associate, Clinical Informatics – Mount Sinai Medical Center

Thank you.

MacKenzie Robertson – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks everybody.

Leslie Kelly Hall – Senior Vice President, Policy – Healthwise

Thanks for inviting us Jamie.