

**HIT Standards Committee
Clinical Operations Workgroup
Transcript
December 6, 2013**

Presentation

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thank you. Good morning everyone, this is Michelle Consolazio with the Office of the National Coordinator. This is a meeting of the Health IT Standard Committee's Clinical Operations Workgroup. This is a public call and there will be time for public comment at the end of the call. As a reminder please state your name before speaking as this meeting is being transcribed and recorded and also please keep in yourself on mute unless you are the person speaking. I'll now take roll. Jamie Ferguson? John Halamka?

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

Present.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Donald Bechtel?

Donald Bechtel – Health Information Technology Standards Committee

Present.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Chris Chute? Jeremy Delinsky? Floyd Eisenberg?

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

Present.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Martin Harris? Stan Huff? Kevin Hutchinson? Liz Johnson? John Klimek? Becky Kush? Kim Nolen? Marjorie Rallins? Wes Rishel? Cris Ross? Joyce Sensmeier?

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

Present.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Dan Vreeman? Kevin Brady? Jay Crowley? Clem McDonald?

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

Present.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Nancy Orvis? Terrie Reed? Karen Trudel? And are there any ONC staff members on the line?

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

Farrah Darbouze from the Office of Science and Technology.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thank you.

Christianne Williams – Business Analyst – Office of the National Coordinator

And Christianne Williams.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thanks Farrah and thanks Christianne. I will now turn it over to you John.

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

Great. Well thanks so much for folks joining today to talk about image sharing and our sole agenda item today is to think about the testimony that we've received in the past how we can classify the nature of the standards or tiers of standards that we may want to recommend and to generally start getting guidance from those on the phone based on everything that you've heard as to what would be the degree of specificity where the standards are mature and suitable for purpose or where the industry will continue to evolve.

If I were to look at all the testimony, and thanks so much Michelle for providing us a copy of all the PowerPoint's and all the commentary, it seems that we've heard from stakeholders that there is a push, a pull and a view capability for image exchange and these have been implemented in many local situations and in some vendor products.

But, as Clem has reminded us, that it isn't sufficient to talk about just an image that gets pushed, pulled or viewed it is also important to think about the reports and so very often whether it's a radiology report or an EKG or echo report or other type of modality the interpretation that is plain text can be extraordinarily useful and sometimes even more useful in the clinical care setting.

We know that there are DICOM standards that are serving us very, very well and I think we heard from Dave Clunie that it's not as if we need to throw out DICOM and replace it with something else, there may be refinements that are necessary, but as Farzad initially charged us we also have image modalities that are non-DICOM-based.

And although EKGs are a timed series of data they are often represented with something like a PDF and that is sent from place to place or it may very well be that there are non-DICOM objects like a JPEG or PNG file maybe even a TIFF file, it could be a photograph of a patient dermatologic lesion or it could be a snapshot of some aspect of the patient's care history that is hard to represent in text, a video of their walking, a picture of, you know, some kind of trauma that they've had.

And so, as we think together today as to what are the nature of the standards, as Jamie originally started, I mean they're a series of use cases where we look at actors actions and events, and a series of these kinds of text DICOM and non-DICOM objects that we need to exchange.

So, what Jamie had put together for us was some general tiering of the kinds of things that we might use as at least in early classification as we start to both recommend standards and seek input from standards development organizations and organizations that assemble implementation guides.

So, these slides that Michelle sent out for this meeting do include a slide on recommendations that start with, well we know Clem that radiology reports are an essential datum to exchange and we know that there are probable HL7 content standards that could represent a text report and through the hard work that NLM has done and will continue to do with RSNA we actually will get a LOINC representation of a radiology test or procedure name.

So, let me just, as we start this discussion today, begin with a Tier 1 of if we were to say a text-based report is something that we believe should be standardized and candidate standards for that could include HL7 messaging with vocabularies such as LOINC. I'd like to seek your ideas and feedback on that particular tier.

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

Well that's what 90 percent of what's being delivered now that message and that media in hospitals and a fair amount outside of hospitals, Canada is going that way, I believe for messages as well as some other, a few major institutions. So, it would be the least resistance pathway to just facilitate the coding for it and then make sure that it can fit into the packaging that gives security and all the rest. That may be a bit of a challenge.

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

And so we've often talked about three kinds of standards, the content standard, the vocabulary standard and the transport standard. And so was we talk about this one, you just heard from Clem, that HL7 messaging is extraordinarily commonly used today and LOINC maybe a convergent vocabulary around the radiology procedure because we've had RadLex and locally invented proprietary codes, all kinds of approaches in the past.

Where we do, Clem, have an interesting challenge is on the transport of this text-based report, because I think if people were to do an inventory you would find, you know, TCP/IP, REST, SOAP, Direct copies of data that go on thumb drives, I mean, you know there is a vast number of methods to exchange the data at the transport level and do we want to try to get specific, I mean, as we did with the C-CDA and transitions of care and say, you know, we believe that Direct is an important way to send such data between organizations, within an organization do what you want, but between organizations Direct with the option for something like XDR SOAP knowing that there are some implementers that would prefer that other than Direct.

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

Well, the problem – what most of the communication between organizations that I know about and I think there was a survey of it, Marc Overhage presented it, is, you know, fixed VPN connections between places and that's what's happening today.

So, Direct sounds like a good solution but it's not raging through – it's not burning – it's not a force fire yet running through the communities is what I hear. So, I don't know what makes it hard. I don't know – I think all the – you know, what you'd really like to have is something in the hospital to say where to send this report tied to the ordering doctor and I don't know that piece maybe doesn't exist yet or does it? I don't know enough about it.

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

Right and so, again, you're correct that if I were to even just take my organization and look at the way we do results delivery it is a combination today of VNP connections, we do some Direct transactions but it's by no means the majority of our transactions when it comes to things like lab.

It turns out I do my lab results to individual EHRs often through VPNs but then copies to payers or to quality measurement organizations via Direct sort of combination of these technologies.

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

Yeah, well I think you'll have to weigh in on what's missing in Direct that would make it easier or whether anything is missing.

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

Well, hey, Joyce you're on the phone and I'm curious from your seat at HIMSS are you hearing things about suitability of Direct for different kinds of purposes?

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

I don't know if I would say for different kinds of purposes but I think in general it's moving forward, it's being implemented, you know, as with any standard there are challenges around it, but I don't see major push back. So, I think we're just still at the – maybe not beginning but moving towards the intermediate stages of implementation.

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

Well, my read is that what's missing is the packing and unpacking standard approach. So, yeah, you can set up the communication it's through, you know, an organization that then is something like setting up a bunch of VPNs and that's fine, that should work well, but how do you deal with the loading of the package into the e-mail and unloading it in a way that systems don't have to be inventive?

Is something emerging about that and then how does one deal with, on the hospital, say standards on the hospital side say to the patient, you know, it would be really nice if the patients had a way, they know they'd have a way because it was specified in some specification to say, when I check in I'm going to tell you what PHR to send it to and I'm going to tell you some other people to send it to and it will just go and so the CDAs could go be Direct too that way.

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

Right and so –

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

But I don't think that is –

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

We have Don Bechtel and Joyce both who can probably provide some real world commentary. In my case the packing and unpacking is often done when I see Meditech or other vendors using XDR and XDR just happens it's a SOAP mechanism of getting data and out of their application seems to work for better for many vendors than an SMTP native Direct implementation.

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

Yeah, I mean –

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

So, Don or Joyce any comments on that?

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

This is Joyce I don't specifically, but John one thing I could offer is we do collect data about the implementation of things like Direct through our HIMSS analytic database so it's possible that we could get some quantitative information for you back but it's not immediate.

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

Well, Direct is exciting, I was really exceedingly excited to hear about it and I think it handles the low level problem and it just didn't deal with the final mile and I wonder whether we could stimulate that to get solved quickly.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Right. Clem this is Nancy Orvis and John Halamka, I am very interested in that too because as a provider I've got five major manufacturers of PACs and RIS and I've got a health artifact metadata repository I'm standing up this month. This is a very important issue in terms of getting this stuff in and out of the last mile the easiest way possible because I'm setting up –

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

Yeah, well, I think there's two things, one is setting up standard ways that people would – that designate their addressing so stuff could be pushed like patients wouldn't have to remember passwords to pull stuff out and then the other piece of it is how would it interface with existing HL7 interfaces.

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

Right, now Michelle just to make sure I have the list of attendees, we have Nancy, Joyce, Floyd, Clem and Don Bechtel, and myself I believe?

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Did you say Donald Bechtel?

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

Yes.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Yes that's everyone.

Donald Bechtel – Health Information Technology Standards Committee

Yes, I'm on the phone.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yes, so I joined late, sorry, thanks a lot.

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

No problem and so to Don anything to offer from the Siemens' experience?

Donald Bechtel – Health Information Technology Standards Committee

I'm afraid I don't have that information personally available but I can get back to you. But I know from what we're doing in terms of the patient portal this is something we're supporting, but I think we're in the early stages of this. So I don't know that I have a lot of experienced information I can pass on, I apologize.

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

Oh, no problem at all.

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

Well, John, I think what would be good is that I think there's no reason to say you can't use VPNs to do it.

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

Right.

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

Because that is actually the current most common pathway and then what other mechanism by which we can stimulate, instigate or get going the few pieces that are needed to make Direct be magic.

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

Right.

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

And I think one would be interface with HL7 engines right now, the other one is so the routine packing and unpacking for any kind of content, you know, that it's sending and then probably some way for the addressing to where it should go to be able to be done easier, you know, or more standard so that every hospital had to have a way for a patient to specify or the doctor files would always say, you know, where my stuff goes, that maybe separable because that's probably longer term but –

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

And so this is the joy of Direct in that it's in effect like e-mail so rather than setting up a hundred VPN connections right that –

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

Oh, yeah, no I –

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

We set up one connect and there you go.

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

No, no, no I understand, I understand.

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

Right and so I think Clem to summarize what he said is HL7, LOINC and an opportunity to look at existing VPN connections, improvements to Direct to ensure that last mile connection and routing is easiest and there is remember Direct not only SMTP/SMIME but there is an XDR addenda to it. So, in effect, you know, that constrains the possibilities a bit.

Now, I do want to open it up as well, when we talk about non-DICOM images, because we move into DICOM in a moment, the idea of PDF, TIFF, JPEG, PNG do folks have experience or commentary on non-DICOM formats for exchange of actual image data?

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yes, I think I do, from Nancy, you're talking about the actual images like a picture, yes, I think we got it from the fact that we do world-wide electron microscopy results, that the Armed Forces do the pathology so those images may not have been DICOM, you know, you think about the diagnosis by pathology. I don't have it right today but I can probably get that.

We have other images – oh, active duty people get wounded weird places they can take a picture with their cell phone and send it.

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

Well, exactly right and so when we look at what is the native format of a cell phone it's not a TIFF, right, and so this gets to this general question that we're talking about is when do you constrain optionality because it's a good thing for interoperability but where, you know, would a constraint actually impose something on the industry such that innovation is diminished.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yeah, I think the original consolidated health informatics report that Steve Wagner and I put out 6 years ago talked about multimedia and if you do – because that's exactly – you want it to say that there was whatever W3 approved as certain kinds of multimedia things what if you want to start sending an echo or a WMV file, you want to get into that right now because I think static images are not exactly where everything is going.

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

Well, could I just weigh in, so in terms of the original question about PDF. When – we had a lot of experience with PDF, EKGs came as PDFs, endoscopy reports which were rich with images came as PDFs. There are a number of laboratory reports where they include images including pathology slices and including some of the patterns on flow cytometry where they'll have a graphic in the document and those were just – those were sweet and easy because they actually went as HL7 messages with that special decoding, encoding that could take binary data.

So, there are all kinds of them and they keep going, as you know, John, because the people like getting them and the diagnostic people like shipping out their pictures with them.

Ophthalmology, I don't know that I've had direct experience, but there are reports in the field where they'll show photos of the retina along with the rest of the material.

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

Right and we have the same issue sometimes it's PDF, sometimes its TIFF, sometimes it's WVM, sometimes it's AVI, I mean, there's all kinds of different means based on the modality.

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

Right.

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

And they're not DICOM and they don't necessarily have any reason to be DICOM.

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

Right and those things actually ship very well and the encapsulated data type in HL7 even though it's a character-based system. So, just be aware of that.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Actually, that leads us back to LOINC clinical document types. I'm dealing with that right now as we are from the DoD, I don't care what you're going to send me right now but it has to be part of the service treatment member's record I've got to scan it in and keep it. So, that issue –

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

Well, scanned documents – yeah, scanned documents are another important thing, yes.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

But these PDF issues that are different kinds of clinical documents, do you need to have – that's pushing for the LOINC clinical document hierarchy – to get better for this very reason. Because there's a whole – of kinds of PDFs for getting that are different kinds – from clinical – they're one modality but –

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

The strategy – the strategy, I thought that LOINC had – well, I'm not sure, I've got to get Stan Huff on the line, was that the media wouldn't change the LOINC code.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

I understand and I'm pushing that as a consumer of that, I'm working directly with LOINC and HL7 on that as we speak.

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

Yeah, yeah, yeah okay. So, I can just say yes is what you're saying?

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yes.

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

But I would hesitate to today try to build in the mechanisms for videos because of the capacity problems it creates. I mean, I wouldn't object – I mean if we could do it it's fine but I think it will – it's not necessarily – it might stop the rest of it if it had to succeed with very, very big video images.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Okay, but I think we should address the fact that it will, that will be a future topic that we are aware of but are not going to currently address.

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

Absolutely, absolutely it would be wonderful, but I know some places would get killed, that would just shut down if you tried to send them there.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

No we can't even hardly do the other you're right.

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

Yeah, right.

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

So, good, well that was very helpful input and what Jamie has done in looking at other tiers, I mean, if we have text and we have non-DICOM images then we enter into the realm of DICOM itself. Sometimes the way that we want to look at an image is show me of the 43 MRI slices the two that are the most salient for identifying tumor margins, it's a subset and such a thing could be a human initiated push or a query response where an outside firm or an outside physician is saying, send me those two images.

DICOM certainly, as a way to encapsulate a subset of a set of images just fine, but what Jamie notes, and I think we have heard from our testimony, is that there isn't at the moment one convergent communication approach we see variations, VPN. We see emerging standards like WADO-RS. We see third-party vendor products that allow cloud-hosted selection and delivery of images.

So, this may be one area where although we could provide general guidance it may be very hard, in fact not a good idea to specify the one and only one way to do transport of a subset of entire image set and, you know, based on what others have heard or what others know from the industry love your feedback on the transport side of DICOM.

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

I just don't know enough about it John. I had the sense that there were – there existed one more commonly used method but I just really don't know.

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

And DICOM itself has some native TCP/IP communication methods because it does stand for of course, you know, it's the DICOM both a content and a transmission standard in one when you think of using modality to PACs types of transmission within an organization, I mean, because DICOM digital imaging and communications in medicine.

But we are seeing vendor products like we heard from some testimony that will use RESTful type approaches in a web centric cloud-hosted environment, but we heard from Dave Clunie that there actually is a lot going on in DICOM to look at what I'll call Internet friendly transmission methods which are extensions to DICOM itself.

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

Yeah, yeah.

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

So, you know, opening it up to Nancy or Don, or Joyce the things you've experienced on the transmission side of radiology images that you'd share?

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

Well this is – excuse me this is Joyce my experience would certainly be relative to IHE and I didn't attend all of the presentations but I assume you received input from the IHE folks about what the capabilities are. I know it's not a RESTful approach as you're describing. So, it may not be in that cut of things but there has certainly been a lot of work done in that area from IHE and DICOM.

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

Right.

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

And so this is sort of our interesting issue of where do we try to future prove but in future proofing do we either constrain innovation or disallow what is the most common practice and so this is – what Jamie has recommended is that we say “hmm, you know, DICOM, query response and push as is, good.” Future looking there are some interesting cloud-hosted RESTful approaches, however, we at this time do not see enough convergence and maturity to specifically restrict transport to a singular named standard.

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

Yeah, I think that makes sense, yes.

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

Yeah, me too.

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

And then we have the whole notion of an image set and where I am going to have an entire MRI with 43 different images and that needs to be delivered in some fashion from system to system and, you know, I didn't – Jamie is unfortunately on a plane right now so we can't reach him, in his slides he said that that was probably more of a query or pull modality only and I wasn't quite certain why he wanted to restrict this one to query only, because I could imagine the idea of pushing a full image set from one place to another.

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

John, when you say same image set do you mean one day they got, you know, an MRI which has lots of images in it or maybe sequences in it?

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

Correct.

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

Yeah that's the whole study, yeah.

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

Right, so that is he broke down this into reports, non-DICOM and DICOM then into the I want a designated image, you know, send me these two query response or push or full set. Here's the entire MRI every slice go.

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

Well, you know, we got those out of the GE system, we got every one of them and sent them through the medical record system, 300,000 studies a year, a lot of traffic, but it would have been nice to have a standard we could have done that through.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Well, again, I know that there is work that has been done, image sharing through RSNA and IHE, but that's, you know, coming, it's getting developed so it's not ready for primetime like this would require it to be.

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

Well, I mean, if we don't send the whole image it's a lot like having a report, you know, because the radiologist is telling you what he's found and then pointing out some stuff. I don't know that there is a lot of demand for that by itself. I do know that say, orthopedists want to see the whole study, and neurologists want to see the whole study. So, there's a lot – I think there's a demand for the whole study. So, John I would support your direction.

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

Yeah and so, you know, I mean, one of the challenges as we've been talking about is there may be bandwidth constraints.

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

Right.

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

Or storage constraints as though –

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

Right.

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

Let's say I'm an emergency physician and I get a patient and there may be a, you know, a multi-gigabyte study that would require me, a non-radiologist, to try to figure out the salient images to say "oh, well send me the things that illustrate the pathology" would be, you know, potentially both a faster and more efficient kind of directed exchange of information. So, I think –

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

Well, yeah, it would be great, but the question is how many radiologists would do that? I don't think it's an established practice right now or routine practice.

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

Right.

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

Well all I say is I support the idea of trying to get the whole study as well if you can.

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

Sure, absolutely.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

But Clem the only other way they do that now is send me – give me your copy, you know, have the patient give them the copy of the CD or the DVD that they got you know.

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

Well, that's the common way they do it. So, I mean, are you saying we shouldn't try to do it?

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Well –

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

I mean, I'm basically on the side of John saying that sounds like an interesting thing to do and I'm not – well, I'm not going to fall on my sword about it, but are you saying you don't think it's a good idea?

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Well, I'm just – I'm trying to figure out whether it's – the juice is worth the squeeze, but you're right, I mean, I can't even get an electronic copy of a bill from my pediatrician for my daughter, you know.

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

Well, yeah, there's a question of who it goes to. I don't think a patient would – well, the patients do get them on CDs. So, I don't know –

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

The patients absolutely do get them. I will tell you today from experience you go in and you get an MRI, you get a copy of it, you can take it with you.

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

No, I agree with that and I like it, I've gotten my own.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yeah.

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

However, one of the challenges that I have experienced personally as my wife was diagnosed with stage III breast cancer was that we would get copies of imaging studies that might have a Window's specific reader and, you know, you would have to put this into a particular kind of machine in order to read the images and then you may or may not have a doctor who's got a, what I'll call, group policy that allows the introduction of foreign media of an arbitrary type into a hospital computer system.

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

Right, right that's a different problem, but you certainly could almost always read them, they end up having the reader on the disk, you can almost always see them, but I –

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Now that's – but that's the same question, you've just brought up a good question. I mean why spend all this time doing it electronically if there isn't even a policy for the receiver to put it into their records.

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

Right and we locally now do, very often, incorporation of the CDs brought by the patients into our PAC system, we have had situations where we use a third-party cloud-hosted provider for image exchange and fascinating policy issue, Nancy, I'm an emergency physician I looked at your data as it was hosted in the cloud and made a clinical decision, but don't worry I don't need to make a copy of it because it will always be in the cloud.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Oh.

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

Well, I can tell you that our doctors who are making clinical decisions and worried about future liability have said “boy, if I view it in the cloud I actually want a copy kept in perpetuity in the local PAC system” so we see that we’re storing images in multiple places even though there is the promise that the cloud will be available forever.

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

Yeah.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Right and I a physician directly on my staff who will be happy to speak on that topic in San Diego Naval Hospital he’s been writing all of our requirements for emergency physicians and putting them in the EHR functional model version 2 and 3. So, he has absolutely addressed that issue I know.

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

And is his ascertain that we actually should incorporate any viewed image used in clinical decision making into the local system of record?

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

I’m pretty sure 90 percent that that’s actually what Commander Parker said as well, it’s a liability issue and it’s a quality of care issue you know.

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

Could we refocus on – I’m really thinking – I’m not sure John if you own this, but you brought up the issue shouldn’t we be able to send the whole study.

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

Yeah.

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

Are we agreeing or disagreeing? I don’t know where we stand on that.

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

No, I mean, what I heard is that is actually extraordinarily common to want to send the whole study and that there may be some use cases where requesting a subset that is send me just the two that are most salient could be helpful.

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

Yeah.

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

But you’re correct most radiologists are going to want a copy of the entire study. So, I mean –

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

And some specialists too, you know, given their field.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

I would say let's focus on trauma care I think that's a very, very most salient use case where you know that you have to make quick decisions and almost any ER would want to know did you have a – let me see your last MRI or your cardiology report or something wouldn't you? Wouldn't they really want to have whatever the most recent pictures were?

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

Well and so I guess the question would be, it does not harm to say, whole image set transmission using DICOM absolutely should be a capability and optionally the capability to render a subset of selected images that an either person may push or a person may request.

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

I'd be for that.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Okay.

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

I mean, the way I sort of think about this is, have you guys used G-Mail and G-Mail says, here's the full client "oh, are you in a place with only 1 G-Wireless click here for the low bandwidth version."

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

Yeah, yeah.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Well, that means you'll never get the full study.

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

Well, right, yeah, so that is, you know, just recognizing and I'm going to – Michelle, I'm going to actually try to talk to Dave Clunie this afternoon because he's the one that provided us with some very valuable testimony in this regard just to take what it is that we've come up with on this call and validate with him if these things are, you know, we have said we think HL7 with VPN and other options will work for text.

We have said that being flexible on static images that would include multiple modality types PNG, PDF, you know, JPEG probably need to allow those multiple modalities given the number of use cases and then for these last two that DICOM as it exists is probably fine for whole image, you know, validate that there is a means of doing query response on selected images or push as selected images.

And then we will probably suggest that do not constrain transports to one modality at this time because the industry is, well there is IHE, there is work that's been done with DICOM itself, there are cloud-hosted novel innovations and it is too early to declare winners and losers in that particular area and in fact the architectures across different use cases may vary.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yes.

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

Well, I think I like all that. Personally, I don't know if Clunie is an expert on those first two but he's certainly an expert on –

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

He is not, right.

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

Yeah.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yeah.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

So, John, as a matter of process, so we'll update based upon today's call and then once we hear from you regarding your conversation we'll then update the recommendations and distribute to the group to see if there are any further comments and then we'll prepare for the Standards Committee on the 18th?

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

Right, but, you know, since we do have Don and Nancy, and Joyce, and Clem, and Floyd I just want to make sure, because we've had a lot of testimony from a number of stakeholders that you feel like, you know, breaking it down into these couple of categories and this general direction, you know, sounds okay. It was fascinating to hear from Scotland for example that in effect they have one PAC system for the country and that is actually a novel way to solve an interoperability problem.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yes, it might now work here, but –

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

And so hence, you know, again I thought the people from Scotland were great in the way they described how they solved the problem which Clem was VPN of every institution in the country to a central PAC repository.

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yeah, they're in the same time zone that makes a big difference.

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

You know, that's tried and true, but John I think you laid it out magnificently and you simplified it and made it clear. So, I like everything you said.

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

Yeah, this is Joyce, I agree, I do like the idea though of just having a sidebar with David Clunie because he is right at the crux of a lot of this work and I think he would provide – it would be a good sounding board if nothing else.

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

Now Joyce –

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

And he knows DICOM inside and out.

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

Now Joyce are you in Chicago?

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

At the moment, I'm flying to San Diego tonight.

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

Okay, no, the reason is that I believe Dave – is RSNA going on now?

Nancy J. Orvis, MHA, CPHIMS – Director, Business Architecture & Interoperability – Department of Defense

Yesterday.

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

It just finished today.

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

Yeah, because David I'd asked him if he was available today because I know Michelle from a matter of process everything we do is open to the public there are no sidebar conversations, there is no lack of transparency but he is actually in the middle of an RSNA function right now and couldn't join us. So, I mean, Michelle to your point, I will have simply the sidebar of reflecting what we have discussed in this meeting with him and then summarizing that in an e-mail which you could include in the minutes.

Joyce Sensmeier, MS, RN-BC, CPHIMS, FHIMSS, FAAN – Vice President, Informatics – Health Information Management Systems Society

Yeah.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thank you very much.

Donald Bechtel – Health Information Technology Standards Committee

So, John, this is Don, just the chime in here, I also agree with the direction you're going I like what I heard very much, but as I've mentioned I'm not the expert here so I have been kind of e-mailing between some people and I think from a Siemens' perspective, you know, the IHE, XDX or XDS approach is sort of what we're leaning towards and using WADO for the consumer side or W-A-D-O, which I'm not familiar with, but I just put these things on the table and if you would like me to elaborate on that I can have the people who are experts in this area send you something by e-mail.

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

And certainly that would be very helpful because the one thing we want to make sure of is that we do not constrain innovation. I mean, all of us on the phone are simply trying to digest the testimony that we heard and suggest a best practice which constrains optionality to what we think are the smallest number of options and I hope, based on what I've heard today, that there is convergence on what those smallest number of options may be.

Donald Bechtel – Health Information Technology Standards Committee

Yes.

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

And Floyd's been quiet, you know, any comments Floyd from – I know this is not a quality issue, but anything that you would add?

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

Well, actually I was just about to state I agree with the approach you're taking. I think at some point in the future where there might be some additional structure to what is sent and especially if the image can provide some structure it will effect clinical decision support and quality measurement, but this is the beginning of the approach so I would agree.

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

Good.

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

Hey, Floyd, if I could just spin off on that, I've long champion the idea that if a clinician, you know, seeing a patient has to code what his final impressions are wouldn't it be nice if a radiologist did that too, but I've never gotten anywhere with it.

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

And I understand.

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

So, I don't think this is the platform for it.

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

Yes we love our radiology colleagues but when I look at my own radiology reports and it says, this is a completely normal x-ray, however, there is some slight fuzziness that could be Bubonic Plague, radiation exposure or invasion by alien, you know, it –

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

Right, the hedge.

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

Right, well good, so thanks everybody for that input and Michelle anything else that you would add from a process or administrative perspective?

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

No other than opening up for public comment I think that we'll follow-up via e-mail just to kind of keep everybody in the loop, but, thank you very much John.

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

Well, great, well then let us open it up to public comment.

Public Comment

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Okay, Latanya, can you please open the lines?

Ashley Griffin – Altarum Institute

If you are on the phone and would like to make a public comment please press *1 at this time. If you are listening via your computer speakers you may dial 1-877-705-2976 and press *1 to be placed in the comment queue. We have no comments at this time.

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

Well, again, I certainly thank everyone for sticking with us through the multiple weeks of testimony and for getting us to a strawman and I will circulate back to Michelle this afternoon the comments from David Clunie and then we will present at the committee and get the overall Standards Committee feedback on our work.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thank you, John.

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

So, with that Michelle I hope everybody has a fabulous weekend and I will be on the phone with you on the 18th when we gather again.

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

Bye-bye.

M

Thank you John.

Michelle Consolazio – Federal Advisory Committee Act Program Lead – Office of the National Coordinator

Thank you.

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

Bye.

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Thank you.