

**HIT Standards Committee
Clinical Operations Workgroup
Transcript
April 19, 2013**

Presentation

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

Thank you. This is MacKenzie Robertson in the Office of the National Coordinator for Health IT. This is a meeting of the HIT Standards Committee's Clinical Operations Workgroup. This is a public call and there is time for public comment built into the agenda. The call is also being recorded, so please make sure you identify yourself for the transcript. I'll now go through the roll call. Jaime Ferguson?

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Here.

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

Thanks Jaime. John Halamka?

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

I'm here.

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

Um, thanks. And Donald Bechtel? Chris Chute? Jeremy Delinsky?

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

Here.

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

Thanks Jeremy. Floyd Eisenberg?

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

Here.

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

Thanks Floyd. Martin Harris?

C. Martin Harris, MD, MBA – Cleveland Clinic Foundation – Chief Information Officer

Here.

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

Thanks Martin. Stan Huff?

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

Here.

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

Thanks Stan. Kevin Hutchinson? Liz Johnson?

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

I'm here.

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

Thanks Liz. John Klimek?

John Klimek, RPh – National Council for Prescription Drug Programs – Senior Vice President, Industry Information Technology

Here.

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

Becky Kush?

Rebecca Kush – Clinical Data Interchange Standards Consortium – Founding President and CEO

Here.

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

Thanks Becky. Kim Nolen?

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

Here.

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

Thanks Kim. Marjorie Rallins? Wes Rishel? Cris Ross? Joyce Sensmeier? Dan Vreeman?

Daniel J. Vreeman, PT, DPT, MSc – Regenstrief Institute – Research Scientist

Here.

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

Ah, thanks Dan. Jay Crowley? Marjorie Greenberg? Clem McDonald? Nancy Orvis? Terrie Reed? Karen Trudel? And any ONC staff members who are on the line? I believe we're having Lauren Thompson switched over to the speaker line. Okay, with that, I'll turn the agenda back over to you Jaime and John.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Great. Well, thank you everybody for joining the call today. As I think you all know, we have gotten confirmation of a number of different assignments to this workgroup from ONC and we discussed that in the Standards Committee meeting just a couple of days ago. And so what we would like to do on this call is to review those assignments, to have some discussion about their relative priorities and work effort, and then to group the assignments into groups of items that we would plan to bring back to the Standards Committee in presentations to happen every other month, starting next month, in the May meeting. And so the idea is that the Clinical Operations Workgroup would come back with recommendations to the Standards Committee every other month. So the – what I'd like to say is that success for this call would be having an understanding of the work effort that we anticipate for the assigned items, and then deciding on the grouping of those items, in terms of what are we going to present next month, what are we going to present two months after that and so forth. And so that's what I'd like to get accomplished on this call. And I would welcome other comments from John or other workgroup members.

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

Yeah, just as we go through the body of work assigned to us, one of the things we obviously need to keep in mind is the maturity of the standards, the scope of the effort. As we heard from Doug, we will be getting some clarification of marching orders from the folks in the Policy Committee, and I did talk to Farzad and

to Paul Tang yesterday, and they expect that for certain things, like image exchange, that we'll get use cases, that the Policy Committee will provide us further input. So I think it's important, and Jaime has done this in the straw man plan, to stage those things that seem aspirational or ambiguous to later in the work plan, and do the things that are very concrete, have standards maturity, seem worthwhile sooner, rather than later.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Any other sort of opening comments from anybody?

Terrie Reed – Food & Drug Administration

This is Terrie Reed. I didn't make it in the initial attendance.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Hi Terrie, welcome.

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

Hi Terrie.

Marjorie Rallins, DPM – American Medical Association – Director of Measures, Standards and Informatics, Performance Improvement Division

And this is Marjorie Rallins.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Welcome. Okay. So why don't we go ahead and get started then, reviewing the assignments that we got confirmed by Doug earlier this week. And so, let's go ahead and start with the, I guess on the screen MacKenzie, if we could open up the work plan from the Standards Committee.

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

Yeah, and the only note that I'll make to this is, this is the document that was presented during the meeting, so the discussions that happened on Wednesday have not been updated to be reflected in this slide deck, so, it is the same deck that was presented on Wednesday.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Great. Thank you. So let me ask, I think there is perhaps an opening slide of framing, but I think we can jump to slide 3, which is where the work plan really begins. And what I'm going to suggest for purposes of this call, is that we actually should ignore the dates, or at least I would like to suggest that we should ignore the dates because we should come up with our own plan of what we think is the right timing for the different items on here. Does anybody object to taking that approach? In other words, what I'm suggesting is that we should look at the topics and activities that have been assigned to us and consider how to group them into logical groupings that we would report on through the year. And so some of the things that may have been maybe on this work plan for the end of the year, we would bring forward into an early group and some of the things in the early part, we might bring into a later group. But we would essentially group them into the way we think they should be worked. Is that okay with everybody?

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

Fine with me.

W

Works for me.

Multiple participants

Looks good.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. Great. So let's just walk through the work plan then. So we have the first item that's assigned to us is standards to support image exchange. As we discussed previously, and in the Standards Committee this week, we need to have an understanding of the use cases here. And so the idea that there would be a presentation to the Standards Committee is really premature. What I'll suggest is that we may want to outline some alternative use cases to the Policy Committee for their consideration, but since we don't really know what they're asking for, frankly, and even though the standards may be relatively mature, there could be a lot of public input required on this one. My thinking is that this is actually not so easy and this will end up being a lot of work, even once we get the use cases back. So how do others feel about this one?

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

So Jaime, this is MacKenzie. Based on the call, the standards call we had that John referenced at the start of the meeting today, I was going to add time to the Policy Committee agenda on May 7 for hopefully John is available to present the points of clarification that the Standards Committee needs surrounding these different task items. So the May presentation to Policy Committee, I think we can just assume that's the asking the Policy Committee for further clarification.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Right.

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

And Jaime, I have a question. Do we have those use cases today for review or are we waiting on those use cases?

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well, we don't have any use cases today.

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

Yeah, that's – yeah. Okay.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

And so John, I don't know if you're going to present to the Policy Committee in a couple of weeks here, how would you like to pursue that conversation. I'm just looking at what – MacKenzie, what time on May 7?

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

I have not developed the agenda yet, so we could base it around your availability if you do have time on the 7th.

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

And so I could do it if it was before 1 o'clock.

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

Okay.

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

And so, I think we just need to identify Jaime, those things that we feel are sufficiently ambiguous that they are in need of clarification, like image exchange or what do you mean by transport to the patient?

Are you talking about download? You know, a couple of things like that. If we could just enumerate them, then I can develop the appropriate questions.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well yeah I mean, are we talking about access to existing image archives? Are we talking about – I mean, I don't know really what the scope is that they really had in mind. It's pretty much wide open.

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

Well, that's why I asked Paul that yesterday. He didn't have a crisp answer. So, he did welcome my presentation on the 7th and charging the Policy Committee with getting us those answers.

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

Yeah, that's why I was asking about case studies, because it's like, it's hard to understand where they want us to go.

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

Right. Which is why I suggested that those that are ambiguous we defer.

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

This is Stan...the...I agree that we need clarification of the use cases. At the same time, all of the use cases I know, I think would be met by DICOM, unless we wanted to consider essentially just JPEG or one of the standard, more photographic sort of image things. But, I was thinking, I agree that there are a wide variety of use cases and we need to understand those, but are we thinking that we might do something as general as JPEG or something like that, besides DICOM?

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

And again the answer is, it depends on the requirements because if it's delivery to a patient, you probably do want to actually look at Deep Zoom or variants on JPEG. JPEG2000. If it's machine to machine in an enterprise, probably not.

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

Right.

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

And so that's why we'll – we can get clarification from the Policy Committee and I can suggest to them that they be narrow, like, is it cloud-hosted provider to patient image viewing, or something like that.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well, and this is Jaime. So one of the reasons why I'm suggesting that this is actually a lot of work, even if we have use cases where DICOM might be a perfect component, is there are a lot of other things that I think need to be considered in terms of the standards for the choreography of the exchange, the transport, how it works and how it fits into the other existing parts of the exchange. And then, of course, the testing of those things, because I think, well, I expect that we're not talking about within an entity, we're talking about a variety of use cases across different entities, possibly including consumers, and so I think that there are just a lot of other moving pieces in that picture.

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

Correct. And so, I mean the question though is, remember when Doug outlined the sort of things that we can do, there are those things that sometimes we identify the standards, we harmonize the standards if there are multiple, and sometimes we just do a pulse check. And ...

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah.

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

So we can do the pulse check on what exists, like lifeIMAGE, as a company, does this today. What do they do?

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah. But I guess my view is, well, we'll see what we get back from the Policy Committee but I think it's fair to say that this is not one that is likely to fit into one of the early, either of the early reports that we're going to make to the committee in either May or July.

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

I agree.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

So let's go on then, if there's no further discussion on this, let's go on to the next page. And so there are a number of different content gaps listed in the first bullet. Now of course, in our last meeting of the workgroup we decided to recommend the NCPDP formulary and benefits for the download capability, subject to adding guid – sorry, with the use of RxNorm, subject to adding guidance around the use of RxNorm versus other medication vocabularies. And we also decided to recommend the existing NCPDP cancel transactions. And so it, so to pull those out of this one, it seems to me that those are items where we ought to be able to either craft the recommendation and the guidance or the recommendation with a recommendation for ONC and others to create specific guidance. And those two, it seems to me, reasonable to expect we could put into our May report, next month, to the Standards Committee. Then other things in here, version 2 lab orders and representing genomic data in the EHR are very different, but I'd like to pull out the formulary and benefits and the ePrescribing transaction from those, because I'm going to suggest those two we ought to be ready to do next month.

John Klimek, RPh – Senior Vice President, Industry Information Technology – National Council for Prescription Drug Programs

Yeah Jaime, this is John Klimek. I agree with that. I know on our last call there were some concerns about the cancel transaction, and after I did some more research into that, it was mostly in concerns of cancel transactions that were sent to a pharmacy that may have transferred that prescription, due to not having that particular product in stock or whatever. And when the cancel transaction hit the pharmacy, there was no equal claim or prescription that matched that cancel. So basically what we did and NCPDP is, we developed a reject code with a response to the sender of that cancel transaction to basically inform them of that. So, I know there was some concern about the cancel transaction in the last call, but, that's been cleared up with basically a follow up conversation that we've had with our members and coming up with a solution for that. As far as the formulary, there's the concern that you mentioned as to the...some guidance as to the RxNorm being used as appropriate as well.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. So I mean, and I guess my thinking on this is that part of our report would be both to make the recommendation for adoption of those standards, but also to recommend the appropriate next steps for further development of the standards themselves. As well as further development of guidance on their use that would, in the form of perhaps implementation guides or other guidance that would accompany the adoption of the standard.

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

Hey Jaime, this is Kim Nolen. Yes, I agree with that because I think there are some things that need to be understood about what is seen at the point of care today by the provider for the formulary and benefit information and what our recommendations would be to improve that process. And John, I don't mean to volunteer you, Klimek, but I would love to work with him. I'm not sure how this process works to come up with those recommendations for the main meeting, but I would love to be a part of that and work with John with that.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah and Kim, so just generally the way we have done that here in the past is, after we reach consensus, as we have on those recommendations, that we circulate by email the actual language of the recommendations to the workgroup members and solicit input and comment in advance of actually making the presentation to the full committee.

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

Okay. So there'll be an opportunity to kind of add in some more about ...

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Absolutely, absolutely. And if you have some specific language that you want to recommend or suggest for that, you can just shoot it to John and me.

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

Okay.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

John Halamka and me.

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

Okay, perfect. Thank you.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

That would be great. Okay. So let me just double check, is there any disagreement on a plan to include the formulary and benefits as well as the cancel transaction for ePrescribing in a May report to the committee?

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

Seems very doable.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. Then now, so the two other things that are in that one bullet point are really very different. One is the version 2 lab orders, so the order side of the 2.5.1 result that the existing standard, is what I assume that means. And that probably means accompanying a compendium of lab orders and orderables that would be standardized as part of the order standards set, so that's one item. And then the other item that we also discussed previously is representing genomic data in the EHR, which seems more in what I would call the aspirational category, so far as standards are concerned. And so my suggestion on those two is that the version 2 lab orders, we could at least report on the status of the industry, maybe not in May, but maybe in July. But that the genomic data, if we're really going to take that seriously, then it's going to take perhaps quite a bit more time.

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

Certainly, with regard to standards maturity, that's a very reasonable triage suggestion.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Other comments on any of these items?

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

This is Jeremy Delinsky. I think, I agree with the sequence there, but just the one thing on HL7 v2 for lab orders. In conversations that I've been having with some of the national labs, LabCorp, Quest, they've actually been moving away from HL7 to, particularly as they think about integrating with EHRs, and so I think that there's a fair amount of new research that we could bring to the table to show kind of where the industry's going. And I don't know if you have all of those specifications, I do, and happy to share them.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah, I mean I think that would be great. And again, I think similar to making a recommendation based on what exists today with accompanying recommendations for future development. I think it would be entirely appropriate to say that the 2.5.1. order set would be this, if you were going to implement it today and in terms of future directions, there's new standards development work going on or new developments that need to be put into standards for future adoption, something like that.

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

Yeah, and I think where we could probably make some break-through is sort of what's the perceived gaps that are leading to sort of alternative models being developed there.

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

And so I'm curious, what alternative are you talking about for lab, other than HL7 2.x?

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

So they're looking actually for more web services integration directly with EHRs and sort of a fair amount of interactivity around ask at order entry questions for specimen handling. So, what they're trying to do is effectively recreate the portals that they offer for direct order entry inside of EMRs, and so – anyway, and in fact, they have sort of two-tiers of what they'd cons, of electronic ordering that have HL7 and then they have the sort of more web services oriented replication of their portal capabilities. So, happy to share what I have.

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

Sure, that would be very interesting to learn about.

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

Yeah.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah, same here. And I think – but frequently we see that there are both standards-based modalities as well as proprietary modalities that are being used. And I think that a lot of the health information exchange activities follow a similar thing where there are vendor proprietary networks that do frankly a better job of things like workflow integration, but that they're also standards-based that go across the variety of different vendor solutions.

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

Um hmm. And then as far as genomics, I'm, gosh I mean, at least in – at least where I sit on the EMR side, there's been, as far as I can tell, very little conversation to date on how we would do it. And I don't know if others are – have a different understanding, but that would seem to be relatively early.

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

Well, it's early – this is Stan. There are actually a couple of standards for conducting DNA variant analysis and I had a graduate student who actually did a lot of work on cytogenetic results and there's continuing work. But, it's – we put up an interface actually between us and Partners, but it's not in routine use today, we're working, but it's yeah, it is aspirational. But there's been quite a lot of work, but there's been very little uptake or experience yet.

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

Come on, it's just A, T, G and C, how hard could it be?

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

Yeah, exactly.

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

So yes, I know of no production interfaces to exchange genomic data or even enumerated biomarkers between systems. But I'm sure, as we talk about Quest Lab, it would be interesting to know what they do with regard to biomarker or genetic testing results, because who knows how we should even store these things in the EHR. It is probably not very useful to have 30 billion base pairs in your EHR per patient.

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

Where we have the sequencing, we keep it not in the EHR, so.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay, so then to summarize on the topics ...

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

Hello.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yes.

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

This is Kim again. I have a question with the genomics. To me, like in my mind I'm thinking this may be similar to the imaging, where we need some use cases. Because I think of something like breast cancer indications and people who are BRCA positive or something, that are hormone positive, like those are things that could very easily put into the EHR and help determine therapies or future treatments or follow up, versus all of that other information. Does that make sense or ...?

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

Well it does, that's the point I was getting at. So in my case, my wife is BRCA negative, but had breast cancer that was ER positive. I actually am BRCA positive, and I happen to know that just because of the Genome Project, but so how...that's a perfect question for the Policy Committee. Was the intent that you want to see how we store 30 billion base pairs or selected biomarkers for specific diseases such as breast cancer, for which either predictive or treatment knowledge could be gained from such a biomarker.

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

Well, and the BRCA stuff is not simple even in itself, there are multiple variants, many of which myriad genetics has kept internal. But, even just saying BRCA stuff is not simple.

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

Hey, but Supreme Court heard all the arguments and made the comment, you can't patent nature, so, I have a feeling that we have problems there.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah. Well, so I think the other thing that is a possibility there is sort of representing genotyping at a wide range or large scale in the EHR, so I think, again, exactly right. We do need clarification on use cases, but we might be able to inform that discussion through some future deliberations. So my – getting back to kind of the summary of this item, I think that we've got a couple of things that we could report on in May. We can target perhaps the lab orders for July, as a report, possibly with some recommendations both for standards adoption as well as for future work. And then the representation of genomic data in the EHR, we can ask for use cases, but we might also want to consider developing some use case ideas over a longer period of time, in order to recommend what the use cases are that should be considered there.

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

Yup. We'll add them to my list for May 7th.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

So that's – okay. But so that would put off the genomic data representation a little further into the year, in terms of our report back to the Standards Committee. So moving on to item number 4 on page 4. We just, to reflect the discussion in the Standards Committee, the securing of consumer downloads, I think has really is a pretty much definitively out of scope for us, and so, and the standards for securing data at rest, I know that Dixie really has, I think, some confirmed guidance on that from the Privacy & Security Workgroup. So I'm not sure we have a whole lot to do on this one.

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

Correct. And Dixie basically is going to take that one; we can just review her findings.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. Can we just go on to the next page then? So going on to slide 5, the first item there is standards to facilitate unambiguous parsing, longitudinal record sharing and bulk record sharing. So this is certainly a big deal, I would say. What I'm going to suggest is that, I mean originally the...you may recall, the first time we saw this a couple of months ago, this was listed as improvements to the CCDA and I made a comment at the time, I wasn't sure CCDA was exactly the right standard. What I'm going to suggest is that this is probably something that we could survey the landscape on, report back on a variety of activities, mostly in terms of a path forward for future standards development. Because, at least in my mind, the idea that we could recommend specific changes in a short time frame for these frankly huge, big, heavy lifts, is just not realistic. But I think that reporting back and having a discussion with the committee on the landscape and the opportunities for standards development to achieve these things that might fit well into the July time frame. How do folks feel about that approach?

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

And based on standards maturity, nature of the work, putting this one in the let us do a pulse check and report back after not May, but July, sounds good to me.

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

Yeah, it seems appropriate to me as well.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. Good. So them moving on to number 2 on page 5, we've got standards to record advanced directives and care preferences. Now this is one where, in fact, I think there are relatively mature standards that exist. I wouldn't want to try to pull that together for May, but it does seem that fitting this into a July presentation should be doable, and likely with a pretty firm recommendation. But so that'll take one or more workgroup calls, but it seems to me that this one is really doable on the advanced directives.

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

I am curious Jaime, because I hadn't really seen what I'll call a structured form for patient care preferences. Is there an HL7 workgroup on that particular issue?

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well, you notice I mentioned advanced directives, not care preferences, in terms of the standards recommendation. I think that the care preferences is more of an area where standards development is needed, and this is one where I know the Consumer Empowerment Workgroup also has a lot of input to provide on the requirements for those standards. But I really think that while there may be good standards to recommend on advanced directives, I think care preferences is more of a development item where we can recommend development pathway for standards to be developed.

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

So Jaime and John, when we say care preferences in this context, are we talking about what we do as part of the response to an advanced directive, is that the correlation? So in other words, is it chemical only, is it CPR only, is that what we're talking about here? And that we would be able to communicate that via a standard?

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well, I have to say I don't know. And that's – so I think that needs to be clarified.

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

Yeah.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

And that's a good reason for recommending development, but not a standard.

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

And that is exactly the question I raised too at the Standards Committee, which is, if it's DNR/DNI, pressors, that's one thing.

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

Right.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah.

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

If it's me, I would always prefer medicines over surgery.

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

Exact – I mean that's the thing, it's sort of we've opened up a gamut of choices, which is all the right thing; I'm just trying to do the translation in my head.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah.

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

And maybe we do recommend a multi-phase process where we say advance directives plus a very concrete, enumerated vocabulary for preferences around the advanced directive. Oh, and then future work is more general care preferences, which would require a whole different ontology.

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

Exactly.

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

This is Floyd. I think this fits into something Doug Fridsma mentioned on Wednesday, and that is, there's a – perhaps a structure, but not semantics, because we don't really know what all the semantics are yet.

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

Yup.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay, so we can perhaps plan for a July report on that that may include both some standards recommendations and some development recommendations. And then going on to number 3 on slide 5, the standards for API supporting modular application integration. So, at least in my mind, this is one that is – needs a lot of work, or is not well specified in terms of the use case, and so I would tend to put this off much farther out, into probably the fourth quarter.

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

And remember, this is one where we may just ask, so, you've got us a Sharp Grant, how's that going? Or, there have been a few other ONC-funded initiatives, can you report on them.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah.

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

Because this is truly aspirational.

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

Yeah, this is Jeremy. I agree 100 percent. I think we're so early in development here of anything API related in healthcare, that the sort of cases that people are chasing after, in many cases are administrative in nature, they're around scheduling and having appointments on online portals propagated through the practice management systems. That's what I'm hearing a lot about and certainly, what we're working on. So, I don't know if there was a concern here about essentially stitching together different modules that then create a certified solution through APIs that's part of what this intent was getting at here, I don't know. But it does – I think focusing on what people are doing rather than sort of standard setting at this point, is probably the right way to head.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay.

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

Right. Of course, the dream is that you'll have an apps store for health and if you don't like ePrescribing in Epic, no problem, there's an app for that. And we all know that is really an interesting concept and the level of coupling required for a module like ePrescribing is so tight, the interfaces would be dizzyingly complex.

Jeremy Delinsky, MBA – athenahealth, Inc. – Senior Vice President, Chief Technical Officer

Yeah and I can tell you there – we've had someone approach us who's wanted to effectively do that for controlled substance prescribing, because every platform vendor is looking at that right now. And, fascinating to have some conversations to understand how that could even be accomplished, but most of what I'm seeing is sort of not super-clinical right now.

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

Yup.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. So I think we have agreement on putting that part off. If we can go on to slide 7, I believe is where our next items are. And so here, we have three different line items to consider, all working with the Clinical Quality Group. The first is standards for decision support, knowledge representation as well as APIs for query to knowledge resources. Second being standards for defect reporting to PSOs and then the third one being standards for registry support, including structured data capture and transmission to third party repositories. And I'm going to suggest on that third item, that the structured data capture and the transmission to third party repositories are separable; because I think that the standards for data transmission to registries, whether you're talking about a cancer registry or what frankly I'd like us to work on is more a device and implant registries. I think that's, sort of that's one thing, and then the structured data capture with specified syntax and semantics is really just a fundamentally different thing, so, what I'd like to recommend on number 7 is we kind of split those out, into two different work items. And so I guess Floyd, perhaps representing clinical quality, how do you feel about that?

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

I think that makes sense. When I listened to the structured documentation yesterday, I – or Wednesday, I think I'd agree with you.

Rebecca Kush – Clinical Data Interchange Standards Consortium – Founding President and CEO

This is Becky and I can agree with taking these apart and looking at different approaches, but the structured data capture would serve this purpose and right now, I had a little side discussion with Dixie, a lot of the information going to registries is not very useful because it's not in any kind of structured form. So, there's a quality issue with the data that are going into these registries.

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

This is Floyd again. Let me explain my – because I don't disagree with Becky, but the reason I gave the answer I did was a lot of the structured documentation project is all about a format, but no semantics, even at the level of a data model. So I think if we could approach the registries with a little bit of a data model approach, that might then merge into the structured documentation later. That was the reason for my answer.

Rebecca Kush – Clinical Data Interchange Standards Consortium – Founding President and CEO

Yeah, I mean I said I agree we could tease them apart, but I just felt I needed to make that comment because the data, in particular in some of the registries, is not very helpful.

Terrie Reed – Food & Drug Administration

But – this is Terrie. I've been participating in the structured data capture meeting as well, and I was told that registry was not in scope. So.

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

So let me give you an example Jaime of what we do at Beth Israel Deaconess that I think suggests a consensus approach to this problem. We have a certain use case, PQRS reporting or ACO reporting, or alternative quality contracts like ACO reporting but private insurers. And in order to have the reports we need produced, we have to send a set of data elements, some 140 data elements, to a third party which aggregates, normalizes and reports on them. So it is, in fact, high quality structured data coming out of the EHR using Meaningful Use Stage 1 vocabularies, but going to a registry using a creative application of the CCD and not that the CCD is the best approach, but it is one approach. And that solves our problem. As opposed to, the Joslin is really interested, from a diabetic standpoint, in getting SF36 data, activities of daily living and other things from their patients, and their registry absolutely requires structured data capture. So I would just say that you may or may not need structured data capture in your registry, so it's fair to say we want both, but you could decouple the work on them for the purposes of some use cases.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well and it's just in terms of setting out the schedule and the work plan.

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

Yes.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

I'm going to suggest that we can separate these, they may have links, but I think we can separate them, but they're not going to be in May or July. And so, what I would say is, whichever one we end up thinking comes first of these two, well, either we could do them actually at the same time or we can discuss how they might be sequenced, but they're going to be in either the September or November presentations to the Standards Committee.

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

Now what I might suggest is that since there are several live examples of registry transmission to third party repositories already being done in production, that we do that in September, and then work on structured data capture in November. Because again, we want to do both, but it's just one is probably more mature and more in production than the other.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

I agree wholeheartedly with that way of thinking about it.

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

And this is Floyd. I think that ties them together in sequence in a sense, so I think that's a good approach.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

And I'd also like to put a recommendation on the table that we consider use cases of registry – structured data transmission to registries for implants and devices as work items for that – if we're going to do it in September, for that September meeting.

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

This is Floyd, I would agree. I wouldn't just limit it to say quality measurement registries. The question is, if we look at these standards, are we – we're not limited to only what registries – I mean, we want to know what they can receive, but, all the work effort to get these implemented, isn't necessarily going to be on the EHR side, won't some be on the registry side, too?

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah. I mean, absolutely.

Floyd Eisenberg, MD, MPH, FACP – Independent Consultant

Okay.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay, so that, I think – is there any further discussion on that item? And if not, then I'll move us up the page a little bit to numbers 5 and 6. Now, it seems to me that the first one is – it would fit very clearly into more of an aspirational category. And given the volume of other work that we've just discussed, I would tend to put that off towards the end of the year, maybe for our November presentation, to give us time to really come up with whatever we can recommend there.

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

So you're just so persuasive Jaime that everybody agrees with you.

W

I agree.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah, that's just – that's big megillah. So, and then, which brings us to the last item on our list, which is standards for defect reporting to PSOs. And so even though this might potentially be something that we could do earlier, where is this on the priority list? And so if we wanted to do this one earlier, that would bump something else off that we've already discussed. So again, I would recommend putting that off into the fourth quarter, unless it becomes an urgent priority and we want to rearrange things.

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

And very reasonable. Of course, my contention on that one is, I think it's very important and there are many constituents, especially in federal government, who want to see that. It's just I'm still confused as to how an EHR would generate all the data elements necessary for a PSO submission, from the EHR.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well, without having a new plug-and-play module ...

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

Right.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

... to do exactly that.

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

Because we do have what I'll call incident reporting software, and that of course has that structured vocabulary for all aspects of the incident, to report to a PSO, but it's not an EHR.

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

Right. Well, and it's certainly not certified today, right?

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

No.

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

Right. And then we get into all of the – anyway, there's all kinds of ramifications around that and what will be required and are we simply going to require what the PSO requires and we all know what the next step there is, so Jaime, I think the timeline on this is more rational. And I don't know if September/October is right or should it be November/December, that ...

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Well, I think so we have either September or November, so I'm going to recommend November.

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

Me, too.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Okay. All right. So we've actually gone through the list and grouped things, believe it or not, into the four different meeting reports, starting out with our formulary and benefits as well as the ePrescribing cancel for next month. And so I think we also are going to have to consider how many additional calls or meetings we're going to have to have to work through these items. And so I think we have about five minutes left in the hour. I know we want to get public comment. What I'd like to ask is, any member of the workgroup who has any specific recommendations on how to approach any of these, whether they are some of the work items for which we should hold public hearings or whether we want to have panels of experts or whether we want to work with existing SDOs. So a particular approach to any of the work items, what I'd like to ask is send your suggestions on those to John Halamka and me and we can come back and work those things into the existing schedule.

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

So Jaime one small complication, and that is, that ONC is talking about canceling the May Standards Committee meeting, just based on the nature of what we're working on now is actually going to for many of the workgroups take a little bit longer than a couple of weeks.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah.

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

And so maybe we, for your group 1, we consider that a June report, and that will also help us start to gather our experts, schedule testimony and that sort of thing.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Yeah, and that's fine. But I think we'll, for the first couple items, we'll be ready for whenever the next meeting is.

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

Yes.

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

Yeah. And Jaime, this is Liz. One of the things I want to do is work with you and John so that if – because the Implementation Group is also looking at hearing possibilities, let's see if we can't combine efforts...

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

Oh, absolutely.

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

So that – we know we have limited funds and blah, blah, blah, so let's see if we can't work together on that.

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

Yeah, this is MacKenzie. Liz, you actually just took the words out of my mouth. We do have limited budget for the committee meetings, so, we probably won't be able to do in-person hearings for this workgroup, we may be able to piggyback off the implementation hearing, which may end up being joint with the Policy Committee as well. But we could also do virtual listening sessions where we can invite speakers, we can get testimony through the workgroup calls too. So, we may not be able to do in-person, but we can definitely do – gather testimony just through virtual calls.

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

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow
Works for me.

John Halamka, MD, MS – Harvard Medical School/Beth Israel Deaconess Medical Center
Sounds good.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow
Okay, any – are there any workgroup members who want to bring up any other subjects or make any other comments on the call, before we go to public comment? Okay.

MacKenzie Robertson – Office of the National Coordinator – Federal Advisory Committee Act Program Lead
All right. And this is MacKenzie. Before I open it up for public comment, I just wanted to note that we do have it looks like two meetings, two workgroup meetings already scheduled per month. So our next workgroup call will be May 3rd at 11, and then May 31st. So, if we do decide we need more meetings, we'll just have to send the polls out.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow
Right.

Public Comment

MacKenzie Robertson – Office of the National Coordinator – Federal Advisory Committee Act Program Lead
With that, operator, can you please open the lines for public comment?

Caitlin Collins – 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 do not have any comment at this time.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow
All right.

MacKenzie Robertson – Office of the National Coordinator – Federal Advisory Committee Act Program Lead
Thank you very much.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow
Thanks everybody.

John Halamka, MD, MS – Harvard Medical School/Beth Israel Deaconess Medical Center
I want to thank Jaime so much for doing that initial triage, very, very helpful. And I'm going to go back to supporting all my staff in Boston.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow
Yeah.

M

Yeah, good luck.

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

Well thank you so much.

Jamie Ferguson – Kaiser Permanente, Institute for Health Policy – Vice President, Health Information Technology Strategy and Planning, Fellow

All right, thank you.

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

Thanks everybody.