



## HIT Standards Committee Implementation Workgroup Transcript July 9, 2014

### Presentation

#### Operator

All lines bridged.

#### Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology

Thank you. Good afternoon everyone this is Michelle Consolazio with the Office of the National Coordinator. This is a meeting of the Health IT Standards Committee's Implementation 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 the meeting is being transcribed and recorded. I'll now take roll. Liz Johnson?

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

I'm here.

#### Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology

Hi Liz.

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

Hey.

#### Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology

Cris Ross?

#### Cris Ross, MBA – Chief Information Officer – Mayo Clinic

Here.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Hi Cris. Anne Castro? David Kates? Gary Wietecha? John Travis?

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

Here.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Hi John.

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

Hello.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

John Derr?

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

Here.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Hi John. Joe Heyman?

**Joe Heyman, MD – Whittier IPA**

Here.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Hi Joe. Kenneth Tarkoff? Kevin Brady? Michael Lincoln? Nancy Orvis? Scott Purnell, I'm sorry, Sudha Puvvadi? Tim Morris? Udayan Mandavia? Wes Rishel? And from ONC do we have Mike Lipinski?

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Yes.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Hi Mike. Is Erica Galvez on?

**Erica Galvez – Interoperability & Exchange Portfolio Manager – Office of the National Coordinator for Health Information Technology**

Here.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Hi Erica. Anyone else from ONC on the line?

**Kim Wilson – Health Communications Specialist – Center for Disease Control and Prevention**

Kim Wilson.

**Michelle Consolazio, MPA – Federal Advisory Committee Lead – Office of the National Coordinator for Health Information Technology**

Okay with that, oh, hi Kim, sorry about that and with that I'll turn it back to you Cris and Liz.

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

Great, welcome everybody. As you can see on the agenda we really want to get our responsibility or charge around the C-CDA as ONC defined today and so we'll be doing that as well as having a presentation on the C-CDA and I think we're going to go through the charge first and then we'll have Mark showing us and giving us the content for C-CDA. Cris, would you like to take it from there?

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Sure, so if we can go to the slide with the charge. There are really two questions to address the Workgroup today based on work around the C-CDA to date, it really is around usability issues associated with the specification and the associated implementation guidance and does that hinder interoperability.

And the second question is if there are issues that hinder interoperability how can we most effectively address this and I think we're going to have a pretty comprehensive walk through of what the current state of the C-CDA is. I know that we'll have commentary along the way around, you know, what did it take for us to get from the antecedents like CCD, C32 to C-CDA and what additional steps need to happen.

I also know that we're going to get reported out to us some of the input that was provided by the community at least in summary form so we'll have a context of what the leading kinds of suggestions, critiques and concerns have been.

So, I think at this point, Michelle, I think we're ready to turn it over to Mark to lead us through these materials unless there is – if he's here that's great, if not is there someone else from ONC who wants to walk us through slide four?

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

This is Mark; can you confirm that you can hear me?

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

We can hear you.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Let me – can I jump in real quick? This is Mike Lipinski with ONC, I think we probably want to jump on – right, Michelle, the feedback first or not?

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

Michelle had to drop off.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Oh, Michelle dropped off?

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

Yeah.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Okay, so I'll ask Liz or Cris, I think we wanted to reset the stage based on where we were in the other role and what we proposed in the most recent role.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Sure.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

And then go from there is that okay?

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

Sure, yeah, I think Cris is right in terms of looking where we had – where Cris and I have been talking is, you know, one of the things that the Implementation Group has been charged with overall is really looking at usability issues from the end-user perspective and so one of the things that we need – wanted to be sure was that this diligence that we're about to do is not strictly on certification and the vendor response to the certification, but also if we have identified issues in the field where the C-CDA certification was either hindering or helping, or whatever, we also get to that part of it.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Right.

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

So, given that if you want to go ahead and provide us with the stakeholder feedback.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Yeah and I think the Workgroup got a slide that just unfortunately got overlooked and didn't get put into the more comprehensive slide deck that Mark is going to go over, but you should have just recently got it and that's the slide I'm going to talk to you, and this is going to be very quick.

So, in the current, you know, 2014 edition we adopted the Consolidated CDA version 1.1. In our most recent rulemaking the voluntary proposed edition, the 2015 edition, in February that went out we proposed moving to release 2 of the Consolidated CDA and in doing so for the transitions of care certification criteria we proposed essentially a performance standard of saying that you would be tested to show that you could, 95% of the time, successfully, electronically process formatted Consolidated CDAs. And so from that came out the fact that folks had a lot of concern about the variability in the release 2 Consolidated CDA.

And I just wanted to remind the Workgroup first that their relevant comments to this, you had many comments on the proposals a lot focused on edge and focused on, you know, the folks on version 1.1 versus version 2.0 and how they would, you know, essentially be able to exchange and read, you know, a 2.0 coming back to somebody that didn't have that functionality.

However, on this particular issue you raised two main points which was that it difficult to understand how the performance standard could be tested for certification and one I think technical comment was that they thought that there would have to be like a minimally lively derivative Consolidated CDA, because – and this goes to the variation that there could be in the Consolidated CDA that would have to be available to test that.

So, and then one minor point you made was about the patient matching part of it that you thought the month, day and year was unnecessary. And then the other thing I just want to mention real quickly is the comments that we've gotten back so far on that rulemaking and this is just a very high level summary of those comments and this is again more of the reason why this has been brought to you.

So, 20 comments, you know, obviously not a lot but that's what we received on this proposal but it was, you know, very technical-driven comments, vendor-type comments and they question the likelihood of, you know, proper set testing. They thought that 95% threshold would be impractical. I'm reading off the slides here if you wanted to follow along.

And then the main point was that they thought, you know, again the wide variation of the Consolidated CDA would have a problem with implementation, they are expensive to be able to show that you could take every, you know, different version of the C-CDA.

And then the big point coming out of this was that they supported constraining the Consolidated CDA as a better way to achieve our goals that we proposed in that rule. So, that kind of sets the framework for you and then Mark I believe with his slide, comprehensive slide, deck that I've been able to skim over is going to get into the, you know, gritty details. So, I'll turn it back over to Liz and Cris.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

So, Mike, this is Cris.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Sure.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Just quickly, just for context then on this last bolded bullet about constraining the Consolidated CDA as a better way.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Correct.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Is it proposed that we would constrain the Consolidated CDA as a better way to reach the 95% standard or is this an alternative to that 95% goal?

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

I think it was the way that the commenters proposed it was as an alternative. I mean, I think the main point getting across was that there was too much variability in it and that it did need constraint, so that – you know, whatever our goal was, as to the 95%, they pretty much said that wasn't achievable with the way the Consolidated CDA is. So, that was the main point coming across and then the other main point, as is bolded in blue here, is that folks supported constraining it more.

You know whether or not we were to go forward with the 95% I think, you know, that's not so much the issue as at least what we're hoping in terms of getting feedback from you is more about the Consolidated CDA itself, you know, so...

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

Well, I – yeah, go ahead Cris, I have a question too but I'll wait for yours.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Well, it's just that's really helpful Mike. So, I think part of the context that we're going to talk about here is if we just focus on constraining on the Consolidated CDA as opposed putting a numerical limit in place, presumably the assumption is that a constrained version, you know, would tend to be processed more fully –

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Right.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

And I know there is concern in the industry about that. You know when we were plowing through this at pretty high speed last, gosh fall and winter, the issue about how exactly could you find the right documents to test –

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Right.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Was a pretty big issue.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Right.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

So, thanks for the context about either/or here.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Yeah, sure.

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

Well and I think – and also I was going to say, when we talked about – sort of went through the definitions of how you constrain and what the – sort of from a somatic review of what we're saying when we say "constrain the CDA" we got a better understanding that I guess this may be a naïve comment, but either from Cris or from Cris or John, or whomever might be able to answer, I guess I'm fascinated that we are having trouble processing and I guess that I'm taking this to my own experience because we're processing C-CDAs in 80 places and frankly our expectation is they go across 100% of the time.

So, what am I missing? What is it about this – I understand constraining it for standardization I get the completely, but what is it about the performance standard that's creating the problem? What am I missing?

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Well, I don't think that the performance standard is creating a problem. I think the assumption behind the performance standard is that the Consolidated CDA was in I guess such a format that it wouldn't be problematic and what we've heard is, you know, the C-CDA is not constrained enough that there are, you know, a lot of "mays" and not as many "shalls" you know and some "shoulds."

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

Right.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

That lead to this and the different templates and so the question I think or at least my understanding of what we to bring forward to you is, you know, can it be constrained, should it be constrained, where can it be constrained more that would offer more, you know, less variability in terms of exchange.

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

Okay.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

So, Liz's question is a good one, this is Cris again, Liz's question is a good one. I think the issue here is not that the C-CDA doesn't get from point A to point B, the question is are the contents fully and completely consumable?

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Right.

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

Right, correct.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Because I know there are a lot of places where the C-CDA opens up and there is just not a good way to map data types to each other for example and we're going to, you know, we've got a 34 page deck here, boy howdy with a lot of examples –

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

Yeah.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Of where those problems appear. So, I think that's the issue.

**Mike Lipinski, JD – Policy Analyst – Office of the National Coordinator for Health Information Technology**

Right.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

It's really around vocabularies, content, structure and so on.

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

I think given that Cris what do you think, go ahead and get through Mark's deck so that we can begin to have – just so that we can really understand. I mean, I suspect that part of it is gaining a background understanding and part of it is then beginning to determine how might we or might we not constrain it correct?

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, so I think I would comment, you know, I looked through these materials in some depth, I talked to a number of colleagues in advance just to get some viewpoints on a couple of issues. This is an awful lot of material to walk through in 40 minutes.

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

Yes.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

There is a little bit of C-CDA tutorial in here, which is fine and to Mark and anyone else who put this together that's not meant as critique in the least, this is a complicated subject, but I think given that I think we want to try to get through as much as possible with a highlight on here's the specific opportunities for constraint.

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

Right.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

As opposed to necessarily describing, you know, the structure or content in detail or, you know, it's easy to get caught up into the description of why this exists and I think we want to get to the "here's an opportunity" part of the presentation.

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

I agree completely. So –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

So, I think we should turn it over to Mark.

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

Right. Mark?

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Okay, thank you. I think you already started and mentioned one very good point and that is the distinction between the receive and display, and receive and integrate into your local system and I think that's kind of like a line that's going to go through all of these slides, it's one of the impacts that I will address as I go through the slides. So, can we maybe advance the slides?

I'm not sure whether you see something different but I see stakeholder feedback on Consolidated CDA on my end. Is that where you're at still?

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yes, so if we could move towards the –

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

Yes if we could move forward, yeah.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Slide 7 or 8.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Okay, so if we can back up one more slide there is an agenda, perfect. So, this is the agenda just to give you an overview of how the slides are being organized. I'll give a brief overview of C-CDA, very brief then I'll move onto the executive summary that kind of touches on the highlights of the exploratory analysis that I've done with my colleagues and I'm going to go back through sources that we used to collect and consolidate these examples that we're going to go through.

And then I'm going to go through explicit examples and I kind of separated them into two entities, the first one are those examples that kind of go across all of the Consolidated CDA sections, they apply to any section and then I'm going to go into those examples that are section specific and then the last two slides are kind of like a next steps, things to think about. Next slide, please.

So, currently the 2014 eCertification Program required for Meaningful Use Stage 2 requires the adoption of Consolidated CDA standard version 1.1, this is a standard that's being developed by HL7. The standard is based on a clinical document architecture version 2.0 and it contains a collection of documents such as continuity of care document, discharge summary, progress note and other documents, and each one of these documents further contain templates and data elements, and associated vocabularies.

In addition to the existing standard we have developed a companion guide as part of the S&I Framework Initiative at ONC to facilitate the adopters, the understanding of how the Meaningful Use Stage 2 requirements map to the Consolidated CDA standard implementation guide itself. Sometimes the language is not always identical and in some instances the Meaningful Use Stage 2 requirements were more strict than the requirements set forth in the actual Consolidated CDA standard version 1.1.

And lastly, currently, actually this week, we have a publication of a new standard and update of Consolidated CDA version 1.1, it's the version 2.0 it's been balloted in September 2013 with about 1000 ballot problems that have been resolved recently and the new standard has several new structures added, it's got 3 new document templates especially with many new entries. One of the most important thing is that it has a tighter constraint imposed on data elements and also it has tightened vocabulary bindings to those data elements. Next slide, please.

So, I think I've already addressed the first one on the left upper hand side is that the Consolidated CDA Release 2 is a little bit more constrained and it provides more guidance on how to use certain templates, nullFlavors and negation indicators but there is some room for improvement even if we look at the Consolidated CDA Release 2 there are a – some of the vocabularies, some of the data elements have simply too many vocabularies and the mapping between those vocabularies is not always one-to-one and a good example is SNOMED CT and ICD-10, ICD-10 being less granular, SNOMED CT being extremely granular.

In some of our vocabularies the code spectrum is still broad, which means that certain data elements simply say, well you can pick anything from LOINC, whereas practically it would actually have to be a subsection of the LOINC that would need to be chosen whether it's a LOINC specific or laboratory test results, or whether it's SNOMED CT specific for procedures, right, and I'm going to go through all of these in detail.

When it comes to data elements there are also some further constraints that we can impose on data elements values and units, specifically those for vital signs and response. One of the other things is that in terms of data element attributes one of the things we found missing was if that element requires an encoded value be provided often times the display name for that code and the code system name were missing.

And then again we still have a persistent problem, not a problem but simply an opportunity to provide more clarity in terms of nullFlavors and missing information.

And on the right-hand side I think you've already started this discussion is, in this analysis I kind of distinguish between receive and display and receive and consume and integrate. Display of inbound C-CDA documents is possibly using a simple browser and a style sheet that's provided by the HL7 and is part of the package that goes along with Consolidated CDA and actually it's not only – the CDA style sheet is not only good for a Consolidated CDA but it's good for any CDA or CDA derivative. So, any document that is based off the base CDA standard, CDA Release 2.0 and C-CDA is based on CDA 2.0 can use this style sheet. The issues arise when local EHRs need to consume coded, non-narrative inbound data since the variability or optionality in how the data is represented confuses the EHR. Next slide, please.

So, the resources that we use to kind of aggregate the feedback and look –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Excuse me Mark, just a second, this is Cris, something is going on I think with your line or maybe it's on my end, but there is a lot of garble and it's hard to hear you on the speaker phone.

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

It's on all of ours so it's not just you.

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

Yeah.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Thanks.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Is that better?

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

No.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Not really.

**Caitlin Collins – Junior Project Manager – Altarum Institute**

Are you on a cell phone?

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

No, I'm on a computer so my desktop is picking up the sound.

**Caitlin Collins – Junior Project Manager – Altarum Institute**

Oh, yes, it might be the Internet connection then.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

It's pretty rocky.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Okay, well, I'll let me know if I break up at some point then I'll repeat. So, this slide shows you the sources that we used to kind of look over the general feedback depending on optionality where it looked at the HL7 C-CDA R2 ballot comments so that the balloted comment that was submitted for the Consolidated CDA Release 2 and the reason we did that because we thought that the feedback used already has experience with C-CDA Release 1.1 and was provided in addition to feedback to Release 1.1 also with feedback through Release 2.0. And as I mentioned there were about 1000 comments that we actually had to skim through to find the optionality related items.

When we looked at – we contacted some of the ONC authorizing certification bodies to solicit feedback as well, we looked at the ballot comments to companion guides to a Consolidated CDA. We contacted new healthcare providers and also looked at the feedback provided to – which is a website developed with ONC but also the adopters in implementing C-CDA. Next slide, please.

So, I'm going to – we're delving now into the actual specifics. So from this point on you will be seeing explicit examples. Some of the examples will be high level but a lot of them contain very specific technical details. Next slide, please.

So, one of the first things that we noticed and users really strongly provided feedback on consistently across all sections, across all document types is the use of attributes. Whenever an element requires an encoded value that is the value that has to be chosen from a code system typically you provide – you say, this is the code and this is the code system that I'm picking the value from.

So, for example if you're picking the value from a LOINC or SNOMED CT, or CPT-4, or ICD-10 PCS you would provide, as you see in the below example, you would provide a code, in this instance it is a SNOMED CT code and you would provide the code system.

What you see is a series of numbers starting with 2.16 this is called object identifier and an objective identifier uniquely identifies that particular coding system in the entire world actually. But one of the things that's missing is the displayed name that it's associated with a code, in this instance it's endoscopy of stomach and the actual code system named in this instance is SNOMED CT, so if you look at the right-hand side, which is incorrect, you only see that the user provided a code and a code system, but even for me, I mean I'm working with codes on a daily basis, even for me it would be very difficult to catch that error that this code actually does not belong to this code system. The code system that you see here is a LOINC code system and the code doesn't look anything like a LOINC code.

So, this results in mismatches between the codes that you provide and the code assistance that those codes belong to and sometimes those errors are not discovered until very, very late. An issue is specifically when multiple vocabularies are allowed for a specific data element and this is an example of a procedure code example where up to four different vocabularies are allowed to be provided as a code for a procedure. Next slide, please.

So, the bottom line is what we may want to do is one of the recommended constraint is when you communicate the code please communicate the code display name and please communicate the code system name as well.

This slide goes into the problems of vocabulary options and I think this is the nuts and bolts really of interoperability is that there are still too many vocabulary options for a given data element and I used again the example from a procedure code where if you want to provide, if you want to say, well this is a procedure I performed on this particular patient let's say a cholecystectomy you can have up to four different vocabulary code systems that you can pick the code from.

And the problem is that these different code systems have different levels of granularity. For example, SNOMED CT is significantly more granular than ICD-10 PCS and you also see the binding of these vocabularies. So, LOINC and SNOMED CT should be provided. CPT-4 and ICD-10 PCS may be provided but there is no shell binding.

So, the problem is that one doctor can maintain all of their procedures in ICD-10 PCS, receive the SNOMED CT code doesn't know what to do with it. I mean it can display the code but it may not be able to integrate the code within its own EHR and vice versa, you can maintain SNOMED CT, you receive ICD-10 PCS code the system wouldn't know what to do with it. So, next slide, please.

So, the other issue is that the vocabulary seems to be too broad for some data elements. So, some data elements say, well this is the vocabulary that you should use and you can use entire vocabulary code systems, either entire SNOMED CT, either entire LOINC and the impact is that sometimes the SNOMED CT problem code can be used in a procedure template and inbound data, and again I used the same example, the procedure code example where it says that the procedure code should be picked from a SNOMED CT code system, LOINC, CPT-4, ICD-10 PCS.

Well, SNOMED CT codes, a code system doesn't contain only procedure codes it contains a lot of other codes, it contains codes for specimens, for micro-organism names, for problems, for, you know, symptoms and the below example shows you, from a coding perspective a perfectly validly constructed XML code to communicate the procedure code, on the left is an example that you are actually using the SNOMED CT code to communicate a procedure cholecystectomy, on the right-hand side you are using – this I think should be – sorry, I should changed the ICD-10 PCS to SNOMED CT, this should be a SNOMED CT coding system, because a SNOMED CT cholecystectomy sample, which is a specimen it's not a procedure and a SNOMED CT code 309 and the point was to show that both the codes come from SNOMED CT coding system, but on the left-hand side it's really a procedure, on the right-hand side it's actually a specimen that we're talking about.

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

So, Mark, as we go through these issues and you suggested a remedy can I equate that remedy as the constraint that, at least from your work, you believe would solve the problems that you identified? Are there – I mean, for example the remedy you gave in this one was constraint as SNOMED CT from an antecedent way but you didn't address LOINC. Is that all we would need to do? I'm trying to get a sense of what we're looking at here.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Right. You're looking at a sample of a proposal. I didn't go systematically through each one of the issues and each one of the vocabularies to provide a solution proposal to each one of them. This is something that would take a lot more than several days of, you know, work that I had at my disposal to prepare.

What I wanted to exemplify here is from a conceptual perspective give you a flavor of the type of the issues we're dealing with and the proposed how we may go about solving one of those issues. So, you're correct, in this instance we would have to look at LOINC and we would have to say, well, we shouldn't be using the entire LOINC maybe we should create a LOINC subset or value set and further constrain LOINC to those that pertain to procedures that we found would be adequate for the procedure, activity procedure act, again procedure activity, procedure template is a template used for procedures that change physical properties of a body, you take something out of the body, you cut something.

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

Right.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

So –

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

So, I understand what you've done and I'm wondering and I was trying to interrupt you for a minute because I know you've got a lot more to talk to us about, but what I'm wondering, and I clearly acknowledge first of all the amount of work it took for us to get to this place but also looking forward to a work plan, I'm thinking out loud that if we had a list, a consolidated list that pretty well covered the water in terms of the kind of constraints that might be recommended and then we could delve into each one of those to try and get feedback from both in and outside of our group that we might be able to get to a recommendation faster. What do you think about that Cris and others?

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

I think that's great. I was trying to follow along as well. This presentation is going very nicely but it would be great to have a compendium of sort of problem/solution.

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

Right. So, if we can just kind of put that down on sort of, as we used to say, you know, the parking lot. I'm trying to translate as we're going into what the work that needs to be done is and what kind of aides we might need to get that work done. Keep going Mark. I just wanted some validation that I was following the flow here.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Okay. We can switch to the next slide, please. So, this also goes – this is – it's an issue, it's a minor issue but it can still cause confusion in that when an object identifier, the identifier that uniquely identifies a value set or a code system is communicated in a Consolidated CDA it is, at least at this point, impossible to distinguish between a code system object identifier and a value set system object identifier, and there is actually a project, a value set project in HL7 that is currently modeling an extension to the Consolidated CDA schema that would introduce a new attribute value set object identifier or a value set to separate the concept of code system and value set.

So, the impact is simply from a user adoption perspective, it can cause sometimes confusion that if the user looks at the OID it doesn't really know whether it's a code system or a value system. Next slide, please.

So, one of the things that was actually addressed in the Consolidated CDA release 2 but still requires – I still found certain areas where this has not been addressed is the specification of a binding to a value set, the value set can be static or dynamic. Static means that the codes within that value set are bound to specific version of that value set. So, the value set version 1 can have 10 codes, value set version 2 can have 15 codes.

The dynamic value set is a value set where the codes are tied to the most current version of the code system and the impact to the user is in static binding you need to load the value set codes only once in your EHR. In dynamic binding you really need to periodically check for the latest code updates and update your EHR database continuously.

So, the point that I'm getting at, it's really important to state whether a value set in a Consolidated CDA is static or dynamic because that effects the processes that the vendor sets up to update those periodically. C-CDA significant – C-CDA release significantly improves those, but I listed, you know, several of the value sets that are still not addressing that point. Next slide, please.

This is a general issue of the use of nullFlavors in no information and generally what do we do with – what do you put into the Consolidated CDA when the information is missing or how can we use the nullFlavors more consistently.

The impact to the EHR vendor is if you don't get specific information you don't know whether that information is missing whether the originating source knew what the information was but wasn't required to communicate it so that's why it's missing or whether the originating source asked for the information, documented that information is not available but that data is not communicated to the incoming, to the receiving EHR. Next slide, please.

This goes a little bit into the details, in the interest of time I'm going to move forward to the next slide where I'm going to go into a specific example. Next slide, please.

So, this shows how there is significant variability of how the nullFlavors are specified and on the left-hand side you see an example of a header where a patient's address is being documented, you see in the dark blue the word "addr" it basically stands for address and it's the beginning tag and anything that is missed within those tags street address lines, city, state, postal code and country belongs to the address of the patient.

On the right-hand side you see the different ways of how you can communicate if you don't know what the patient's address is. On the top side you see that the nullFlavor for the actual address is being provided of NI, no information, but in this user the sending system also chose to use sometimes NI, sometimes NA, not available, sometimes unknown for different children of the element address so for street address line, city, postal code, country it's a lot.

In the lower example you see that the address element itself doesn't conform to nullFlavor but the elements within, street address line, city, state and postal codes do have it and also they have different values for the nullFlavor.

And on the lower end you see one example where the user chose to just specify on the address level and say, I don't know this information and the user didn't specify or declare any other element such as street, address line, city and state.

The example solution is – I looked at the European Patient Summary Implementation Guide called epSOS and epSOS very clearly stipulates that if you don't know the address you have to say that at the address level and you have to use the nullFlavor NI, and you cannot declare any further child element. And what this does it makes it very explicit to the vendors if you don't know the information where that knowledge is supposed to be communicated and how the information looks like. Next slide.

So, we've got about 15 minutes left I'm not sure whether we'll have time to go through each of the sections, but the next set of slides walks through specific sections and gives a lot of details of specific elements or attributes that seems to be a problem in that particular section. Next slide.

So, I'm going to start with the header section first, so one of the – the users often complain that the marital status code is missing, that the data elements associated with the language code are also missing. They also noted that for gender, race and ethnicity when the code was communicated often times code system was missing, code system name was missing, display name was missing.

Another problem was the inconsistent use of name qualifiers especially for last name. Another problem was for birthplace one of the user – several users state that the US state is required but country is not required, if you look at the actual guidelines it says that the state must be specified if the US is the country but there is no requirement that the country has to be specified.

If the postal code has main binding the city doesn't – and the city element is not specified, so if you omit – so if you communicate the postal code but don't communicate the display name to the actual code the user doesn't really know that the name of that city will know the postal code it will have to look at the USPS postal service to figure out what the actual name of the city is.

And there are a couple of other issues that were raised but the impact is that the significant variability in how information is sent makes it difficult for the receiver to, you know, integrate that information in a local system and use it in a meaningful way. Next section. Next slide, please.

So, this slide goes into the issues pertaining to the results template that includes lab results and other types of results and one of the issues is that for the result code the result code accepts LOINC codes, SNOMED CT codes and any local code. And again, the problem is the interoperability, if the receiver maintains only a LOINC code but receives a SNOMED CT code or a local code that's, you know, for some – that's a local code, the receiving system wouldn't know what to do with it and it would be very difficult to integrate the code.

Again, the system may be able to display that code using the CDA style sheet but it may not be able to integrate that code. And then again, the problem is that any code from LOINC and SNOMED CT code is still permitted. I've addressed that previously for a procedure code example, but this gives an example for a result code example where entire SNOMED CT code system is permitted and entire LOINC but not all LOINC codes are laboratory codes and procedure codes, some of them are clinical codes and most certainly a lot of SNOMED CT codes are not result codes but there are also other codes as well.

And then the third issue is that even if you pick one LOINC code, coding system, so let's say we all agree that we're going to use LOINC as a result and we're going to use – we're going to further constrain LOINC to only laboratory LOINC codes still we have a problem with optionality is that there are many LOINC codes available for one result.

For example, for erythrocyte count you actually have three perfectly valid LOINC codes and the only difference between those three LOINC codes is that one doesn't specify the method, one specifies the method as manual and one says that the method was an automated method and the impact is at the receiving – to the human eye those – if you look at the values it would make sense, but from a computer perspective the receiving system doesn't really know that these three LOINC codes are kind of associated together and it would be difficult to integrate and graph them.

And the overall impact I guess is that the results – when we look at the results section, labs constitute up to 60% of diagnostic procedures, so lack of consistency in representation of that lab data has a really profound impact in entire healthcare and it can lead to a lot of unnecessary duplication of lab tests simply because lab results cannot be efficiently integrated. Next slide, please.

So, this is still pertaining to – where still within the results section, there is also no guidance on the units and the value representation for lab results. So, for example the lymphocytes relative count can be recorded as 45% or 0.45 in decimals, and again, if you're on the receiving end you would need to – and if you maintain percentages, you would need to calculate or convert the decimals to the percentages.

If you're receiving an absolute lymphocyte count that count can be recorded in a variety of ways, I've given you an example of only three of such ways but you can see that it would be very difficult to graph that data as it is and a conversion needs to happen if you received that data and, I don't know, maintain in your own system only let's say 2800 type of value not necessarily 2.8 times some power.

The interpretation – the other problem pertaining to results is that the interpretation code and reference frames were also missing. Currently, they have a shared binding in a Consolidated CDA but they were also not provided, so as a receiver and because laboratory test results can be resulted by different diagnostic devices, and these devices can be calibrated in different ways, the reference range will tend to differ based on, you know, the observable entity that you're looking at whether its lymphocytes or monocytes and if the reference range is different than the interpretation of the results, whether the results are low, high, abnormal will also tend to differ.

And finally, in the results section the method code was – currently the method code or the method that was used to perform the diagnostic test currently has a may binding so you can provide that method if you want or you don't have to if you don't want to. But there is no vocabulary binding specified for the method at all so this is a free text field, you can provide basically whatever you want and for the incoming system that makes it literally impossible to normalize and integrate, you know, incoming variability in the values of the methods. Next section, next slide, please.

This slide goes into the allergy section and many of the users said the reaction severity was often missing for allergic reactions. So if an allergy was documented for a particular patient let's say penicillin allergy then the reaction to that penicillin and the severity was not documented, and even further severity can be expressed at the allergy level or the reaction level and there has been confusion some via doctor's side which, you know, which level should be chosen to document the actual reaction to the – the severity to the allergy observation.

And again, we're talking about the variability of how the information can be provided in terms of severity and optionality of whether or not it is provided in terms of reaction and severity and this can be difficult for the incoming – for the receiving EHR to understand. Next slide, please.

This goes into the uses of medications and again we found that for medication codes often the medication code was provided but nothing to display name or code system name. Route was not specified. Interval timing was not provided for – even for common daily medications. So, the impact that has on the receiver is that the reconciliation integration and inbound medication information is difficult at best.

The other problem was that there is – and this is a known issue with the Consolidated CDA, the structured doc working groups are familiar with this issue, is that it's difficult to express those quantities for compound medications. So, if your medication consists of multiple different ingredients each one of them have different strengths, it's difficult to use the dose quantity data element to express dose quantity for that particular compound. Next section, slide. And this is –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

So, this is – excuse me I'm sorry, this is Cris, we're getting up to about 4 minutes left here so I think we need to take a few minutes here to just describe where we should go with this, you know, we're obviously not in 4 minutes going to get through the rest of the deck and have a discussion. So, Mark I'm wondering if we can pause here for just a minute just given the time. Liz I don't know if you're still on the line? I think Liz had to leave, so –

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

I'm here, I thought that –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Okay.

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

Hey, Cris, I think the call is scheduled until 1:30 is that wrong? I have to drop off at 1:00.

**Caitlin Collins – Junior Project Manager – Altarum Institute**

It is.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, is it scheduled until 1:30? It is scheduled to 1:30, I'm so sorry, I apologize.

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

No problem.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

I'm used to these just being one hour long.

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

Yeah.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Mark apologize, but given that I have interrupted your flow, and I apologize for that, I think we want to get to the end of the deck here if at all possible in, you know, 10-15 more minutes so that we can then talk about next steps and have a discussion on some of the context. Does that sound reasonable?

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

Yes that sounds great and I do have to drop off and Cris thank you for taking it. I would like us – when you all get to that part would you re-discuss sort of the concept of maybe if we had a consolidated list of recommendations and then we could go to the specifics of a recommendation, you know, of an issue and then the remediation for it, maybe that would help us move through our work faster as you all get to that part of the discussion.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Correct that's –

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

All right.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Where I think we should go.

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

All right, thanks everybody, sorry I have to drop off.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

See you Liz.

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

Bye-bye.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Mark apologize back to you.

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Not a problem. We are at the very close end so I'll wrap up quickly. This slide shows another issue with medications is that not only is the medication section structurally one of the most complex sections but it has significant variability in how medication information can be captured.

You can use one field in one code to say that the patient is using aspirin 500 mg oral tablets or you can use distinct separate fields to capture and document each one of the constitutive components of the previously mentioned, you know, medication so you can have one field that documents the actual ingredient, one field for the dose, separate field for units and separate field for form and, you know, one vendor can say "well I'm going to use just one field to populate and provide one RxNorm code for all of the information that pertains to this medication" the other vendor can say "well I'm going to use distinct fields because that's how I set up a system of my own" and then of course if you are to exchange information between one another that can be very difficult to interpret incoming data and integrate it into its own system.

Again, the display is not affected, you can always display incoming C-CDA but integration is difficult. I'm going to – let's skip through the next slide and go to the social history, smoking history. And then again in this instance, again, the persistent problem is the omission of code system name and display name if you provide any of the codes pertaining to smoking status.

The problem in this section is that there are three template options for documenting smoking history within the social history section and the Consolidated CDA release 2 actually provides a lot of clarification in that you should use – if you're attempting to comply with the Meaningful Use Stage 2 and you need to document current smoking status you start the smoking status template, for any other types of documentation of smoking habits of a person you would use tobacco use including for previous smoking history, but then there is still the optionality of using the third template, the social history observation template to, although this is not recommended, to document smoking history.

And the epSOS or the European Patient Summary Implementation Guide actually offers only one template to document smoking history and to social history observation template and they don't have tobacco use and a current smoking status template they only have one template.

The other problem is that even if you pick the first two templates, the current smoking status and tobacco use, if you look at the values within the value sets or the codes within the value sets for those templates there are overlapping codes, two overlapping codes that I found, so again, users can be confused if you need to communicate that a person is a light tobacco smoker or unknown if ever smoked the user can be confused whether to communicate that information in current smoking status or tobacco use template.

And I've kind of listed options or solutions, or recommendations is that, you know, require the use of both templates, the former first templates, current smoking status and tobacco use, but eliminate the duplicate codes from either one of the value sets that's going to have to be the tobacco use value set or the second option is to require the use of only one template and disallow the use of other templates which is what the European Implementation Guide does. Next section, please.

This set of issues will go into the vital signs, but again, you can see some similarities with the issues explained for the results is that you can communicate the vital signs data in a variety of ways. So, for example if you have a pulse oximetry value for a patient you can say, you can communicate that it's 95% or 0.95. Height can be communicated in centimeters or meters both use the, you know, units that are permitted by Consolidated CDA, but clearly different denominations.

So, this issue for the receiving system is again reconciliation of the data, integration of the data and most importantly conversion of and graphing of that data. So, the C-CDA release 2 recommends a set of units that should accompany the observable entities that you're documenting and that's what you're seeing in the little table at the very right is that they do recommend specific units but these are not enforced, they are not required. So, again we have optionality. Next slide, please.

And then on the document level this is – we're getting outside of the section level issues now and we're getting to issues that span multiple documents across the entire Consolidated CDA is that if you look at different document types such as discharge document, Consolidated CDA, some of these document types require sections – well some of them have sections where entries are required in one document type but not required in another document type.

So, in continuity of care documents I think the vital signs require entries and discharge summaries, they don't require entries. What this means is – when I say entries are required it means in addition to the narrative that you provide to the physician's narrative, which always has to be provided, you also have to encode that information, encode that narrative for a machine to be able to understand the human narrative and process it and this is very important for a type of decision support system that information is really encoded.

So, if you're receiving the discharge summary and continuity of care document from multiple sites one of them has vital signs only narrative form and the other one has a narrative form and a machine processable form, you know, your collection of your longitudinal records will have a variability between coded data and uncoded data and again that's going to be very difficult for – I mean, the utilization of such data will not be maximal so to speak. Next slide, please.

And this is – we're at the end of the issues and these set of slides goes into the next steps. So, this is a question for the group, you know, some of the challenge questions and some of the proposed ways on how to go about it is the first challenge question is what is the optional mechanism to constrain the Consolidated CDA whether we should go through the S&I Framework, whether we should develop a separate initiative as part of the S&I Framework or whether we should defer to the HL7 Structured Documents Working Group, you know how should the constraining be done for the companion guide for the further updates to Consolidated CDA or some other mechanisms.

And the next slide goes into several other things to think about and again these are just suggestions. Next slide, please. These are just suggestions. And what the strategy should be, should we create a universal set of constraints that are applied to each document type consistently or create document specific constraints. So, have specific constraints for CCD and specific for discharge summary. I kind of think that the first option would make more sense because the second option would also create the variability.

The priorities, you know, the suggestion is probably should do an environmental scan to determine which documents are most frequently produced for the Meaningful Use Stage 2 and address constraints for these high-frequency documents first.

Should we approach the constraints of top-down or from bottom-up? Top-down meaning first from document site then section and then all the way to data elements or should we take the down-upwards approach, should we first start constraining by data elements, attributes and associated vocabulary bindings and then go further up into the sections and document types, and my recommendation is to go by data elements, attributes and associated vocabulary bindings first to look at that first because you are dealing with the most granular part of the health records to begin with and that needs to be robustly structured and organized.

The way you can organize data elements and group them into various interests and sections, and document types in any shape or form, but I think if these fundamentals, which is the data element to vocabulary bindings, the values and the units if that is not really nicely structured then we're always going to run into optionality issues and interoperability issues.

And then again, what is the timeframe for constraining this Consolidated CDA release 2. So, that concludes the presentation and thank you for your patience and opening up the floor for discussion.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Thanks, Mark, this is Cris. I think maybe as a last piece of context, I don't know who is currently convening the meeting for ONC, but there is this last slide about work plan which I think defines our timelines for doing this work. Does someone want to speak to slide 34, the work plan slide? Maybe it's Mike? Anyone from ONC?

**Caitlin Collins – Junior Project Manager – Altarum Institute**

If anyone is speaking currently they're on mute.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

All right, well it sounds like we may have lost some our ONC colleagues. So, I don't – this is Cris, I'm not sure I can completely interpret the work plan on behalf of the Workgroup but I think the idea is that we had the presentation today as described from ONC and we'll have a little bit of Workgroup discussion. Actually, if we could advance the slides to the work plan slide that would be helpful, thank you.

And then by July 28<sup>th</sup> there is a suggestion here about presentations, field experiences and then a question mark about HIEs, would like to get a little bit more context about that. We would then reconvene as a Workgroup on August 11<sup>th</sup> and make recommendations at the Workgroup or the Standards Committee on the 20<sup>th</sup>.

So, I'm wondering if someone on the line can put a little bit more color around the July 28<sup>th</sup> recommendation or suggestion and then we'll open it up for discussion. Well, hearing none –

**Kim Wilson – Health Communications Specialist – Center for Disease Control and Prevention**

This is Kim from ONC but we don't have anyone at this time to elaborate on July 28<sup>th</sup>.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Okay. Well, it would be helpful to just kind of understand what you all had in mind. So, I think at this point let's turn it over to the Workgroup for those who want to make comments. I would suggest that we talk about either questions to the materials that Mark presented or we get to the next steps and figure out how to frame up the work we should do. So, does anyone on the line want to comment about next steps?

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

Cris, this is John, there were a couple of things there, I mean, I don't personally feel in a position to render any judgment about what was presented because I take that as very good –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right.

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

Technical subject matter expertise, but I think a couple of things, one is I'm assuming that there is an actual list of issues that merit consideration for being identified as constraints that should be implemented in, I would guess, a companion guide or an implementation specification –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right.

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

As we look ahead to the next round of certification criteria. So, you know, I think what was presented was examples of things that could be candidates but I assume there is a broader list that really would be what should be evaluated by a technical expert group and that might be pointing you to the S&I Framework being a good place for that.

I also wondered if there is not an opportunity in there, is there a finite list or identified from balloting through HL7 or is there an opportunity for – are we looking for expert review to potentially provide commentary back on whether either a closed candidate list is fair for being evaluated or if there is opportunity to add to the list and suggest other candidates.

And then really the last thing, even with constraints, it's not anything more than an observation, but certainly with a very long list of that kind of set of constraints I don't take that as nontrivial work for vendors to go do –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right.

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

And certainly not to certify against. So, you know, is the goal purely to identify what should be a companion guide or implementation specification that's been appropriately constrained for the 2017 or 2015 criteria edition or is there something that we're out to try to do earlier than that with this body of work to have it informative in the market but again I get to the point we're at the delicate state with adoption for getting people to Stage 2 use where I hate to say it this way, but we're a little bit trapped into where we are right now, if that were any part of the goal versus just strictly looking ahead to the next phase and trying to improve it for 2017 certification.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right. So, I guess, John great points. I guess maybe this is an item for discussion. Let's assume that if we look at slide 31 next steps, the optimal mechanism, I'll admit that I have a bias around HL7 Structured Documents Workgroup as being a better venue than S&I Framework.

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

Yeah, I wasn't offering the opinion one way or the other it was just –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, I just think the HL7 Structured Documents Workgroup already has the people who, to your last point, are probably closest to what it would actually take to get this work done –

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

Yeah.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

And would understand the kind of tradeoffs between changes which may be really valuable, but, you know, are they practical at what point. Let's say we turn it over to the HL7 Structured Documents Workgroup or even the S&I Framework would it be most effective for this group to have – what would be the best instructions that we would send to one of those groups? And I think that's what's described maybe on the next page and John you touched on.

Would it be helpful for this group to say, we want you to focus on, you know, these issues or we want you to focus on this outcome? I'd like to get just a little discussion about process issues from anyone. And John maybe you – you know I'm responding to you maybe you want to take a shot at that?

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

Yeah, I guess I can start. I think, you know, again it depends on what is the end outcome here. If the end outcome is to inform 2017 certification criteria standards and specifications as to the implementation specification then that is a very different statement than trying to influence the current state of use and improving the current state of exchange. And I kind of feel like in the timeframe that this might come to pass the former is probably more realistic than the latter as an end goal, I'm not saying that's impossible.

But, I think that would be my suggestion that this is geared towards really trying to approve the adoptability and implementability of what is the basis for content conformance in the next round of certification.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right.

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

Especially by 2017, you know, if there is an opportunity to get it out in some manner prior to that, great, but that's kind of the drop dead, because then you're going to lose the opportunity to really do that after that, at least I wouldn't even want to contemplate it. But, that would be my suggestion and then this allows this, you know, we defer to HL7 or whoever is the convening authority, the expert panel to really develop what – it's not like we're going to judge the list of what you come up with per se because that's already a forum vendors should be participating in and if they're not they need to be encouraged to, but we will look to that being your instruction, what developed that next constrained version.

I think all the examples that were presented made real good sense, but I doubt it's all of them and I'm not sure what kind of vetting process they've been through to assure that they really are – you know, is there some kind of merit test to say these really are valuable improvements or are these just things that are kind of annoyance factor that you still would leave to the "may" and the "should" kinds of statements.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right. Great comments John. Any comments from others on the Workgroup? So, I guess I'd ask the question, maybe Mark going back to you, you know, assume that this – we're assuming, as John said, this is great technical work, we'll assume that it's representative of the community as a whole, you indicated where you took the feedback from that was really helpful.

If we assume that the goal here is to turn this over to an expert technical group, whether that's HL7 Structured Document's Workgroup or the S&I Framework, what's ONC's opinion about the most effective thing we could do, which is question number one.

And then question number two; I'd like to get a little bit of viewpoint on the point that John raised around, you know, what's that target here in terms of timeline? And John you may want to sharpen up that question, but Mark what's your thought if our goal is to turn this over to an expert working group?

**Joe Heyman, MD – Whittier IPA**

This is – can I just say one thing, this is Joe.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, hey, Joe, yeah.

**Joe Heyman, MD – Whittier IPA**

I noticed that the groups that were asked about this, the provider groups, were all large hospitals or hospital doctors.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Fair point.

**Joe Heyman, MD – Whittier IPA**

And, you know, there are a lot of smaller vendors that smaller medical groups use and I'm just wondering whether there is going to be – I mean, are we covering those groups?

It's another thing entirely for those vendors that are used by a lot smaller physicians to make changes and I just – I don't know the answer to the question as to whether or not that makes any difference whatsoever, but it just occurred to me while we were going through those slides that it sounds like we're going to be asking people to make some very big changes. So, I just think that this needs to be addressed by somebody.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah.

**Joe Heyman, MD – Whittier IPA**

And maybe it's the S&I or the HL7 people I don't know, but I just think you can't ignore that, it is a habitual problem that we always go to those large networks and those huge hospitals but we never go to the smaller entities –

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

I think that's an excellent point.

**Joe Heyman, MD – Whittier IPA**

Which make up more than half –

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

Yeah.

**Joe Heyman, MD – Whittier IPA**

Pick up more than half of the people who are going to be using this stuff.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

No, you're absolutely right. I mean, I think I've got in mind who you might recommend in terms of the groups that might represent small practice, but Joe do you have specific recommendations?

**Joe Heyman, MD – Whittier IPA**

No, I don't actually. I mean, I haven't thought about it but I mean at least, you know, the medical organizations have entities within them. I know for example the internal medicine people have within there an organization that's of smaller practices. I know the AMA has a group of private practice physicians. I know that, you know, and I don't know that that's the best place to go either, but at least maybe they would suggest some places to go.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah.

**Joe Heyman, MD – Whittier IPA**

It just seems like going to Kaiser all the time and going to New York Presbyterian or Columbia Presbyterian all the time is not giving you a representative sample of who is out there practicing.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, yeah, well you just put a finger on Cerner I thought sure you were going to say Mayo and make me feel bad.

**Joe Heyman, MD – Whittier IPA**

Yeah.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

No I think you're absolutely right. So, you know, and perhaps that's what will happen at this proposed venue later in the month that, you know, ACP or AAFP, you know, they're pretty active in these kinds of things and may have a viewpoint on behalf of small practices.

**Joe Heyman, MD – Whittier IPA**

Right of course that's just primary care there are also some –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

I understand, yeah, yeah, yeah, but those would be some anyway.

**Joe Heyman, MD – Whittier IPA**

Right.

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

I think that was a great point. The other thing and this is back to, it might have been you Cris or Liz said it, that this can't be only about certification and something that we most definitely have seen thus far with the Stage 2 use effort has been while we're dealing with this the degree to which measurement is tied to explicit parts of the use of the specification and by that I mean there are measurement requirements in the Stage 2 measures, especially for the second measure for transitions of care, about not only use of the specification but assurance of the use of the required vocabulary code sets that are therefore problems, medications and medication allergies.

There are some other requirements that I think a big item in what was presented was the behaviors around null versus no known, you know, empty versus none recorded and legitimately none recorded, but where I'm going with that is there has been an awful level of prescription I think in the measurement requirements for transitions of care that have made this whole process a little bit more challenging, it factors into the legacy data that may be there not in the form that the summary requires.

So, in the spirit of not making the measurement side of it quite as prescriptive perhaps I don't know if there is something to be said about taking that topic up as well to really step back and look at how some of the measures are constructed for – particularly the objectives using the C-CDA and we're not only, you know, verifying that the event happened we're crawling inside of the content of what's being produced on every specific instance to evaluate is it conformant, is that really the objective of measurement or is there another way that this can be obtained? I'd just throw that out there.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

That makes sense. So, I guess I'm using this, and this is Cris again, I'm using the assumption that this group is not going to be the technical expert group to answer all of the great questions that Mark raised and that we're going to need to invoke others to help frame this and that the role of this group is I think to try to focus on the right priorities, to route this to the right place, to deal with issues about timing, you know, at what point is this aimed and making sure that we get, you know, appropriate industry perspective to Joe's point that represents, you know, practice as well as vendor, and then Liz's point about this not just being a certification issue but also an attestation and opportunity and burden on practice.

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

And Cris, this is John Derr.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Hey, John.

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

A couple of things, as you know the – at our last standards meeting we said that the ONC was now going to handle all providers not just under Meaningful Use and I notice also a lot of – there are a couple of slides in there where it talks about somebody integrating it into the system.

I also want to echo what Joe said because at the hearing we had on certification and we suggested a Kaizen type of approach to include all the different vendors and providers that I encourage we add to the list of vendors and add a couple of the LTPAC vendors because we're the ones that have to accept this information and as I've always said, 40-60% of the time, and as some of the slides said, you know, this information goes out on a C-CDA and people have to accept it to integrate it into their own system.

So, if we want to do a full spectrum of care I would recommend that we not only include the physicians but include some of the vendors and maybe providers on the LTPAC side.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Fair points. So, we're going to have to open this up here for public comment in just a few moments. So, I'd like to propose to the group and get response to quickly that number one we ask Mark or others at ONC to come back with a summary that we discussed before, you know, problem and proposed solution, they were all embedded nicely in this deck but it would be nice to have that in a compendium form.

Number two, I think the next time we meet we should have a discussion about what's the role of this group, how can we be most effective to advance this work. I think within that task I think we should identify what's the target to whom we want to turn this work to, is it S&I, is it HL7, is it someone else?

And then we want to talk about timeframe and scope to John Travis's point about, you know, when is this aimed for. Is this a reasonable approach?

**Joe Heyman, MD – Whittier IPA**

This is Joe.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, Joe?

**Joe Heyman, MD – Whittier IPA**

Yeah, it sounds very reasonable to me. I was going to suggest that in the between time maybe somebody could put a list together of the pros and cons of the S&I and the HL7 so that we could actually look at, you know, what are the advantages of using one and what are the advantages of using the other and what are the disadvantages in each case because I for one am not particularly familiar with either one I just know the product.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Right that's a fair point.

**Joe Heyman, MD – Whittier IPA**

So, I think that would be helpful.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah, that would be good. So, Mark are you able to receive these requests on behalf of ONC? Are you still on the line I hope?

**Mark Roche, MD, MSMI – Vocabulary and Terminology Subject Matter Expert – Office of the National Coordinator**

Yes, I'm still on the line and I'll talk to the ONC folks immediately after this call.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

I think that sounds great. So, our next scheduled call is on what date? Does someone from ONC have that on the tip of their tongue?

**Caitlin Collins – Junior Project Manager – Altarum Institute**

It's Monday, July 28<sup>th</sup> at 10:00 a.m. Eastern time.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Beautiful. So, if we could get some materials in advance, you know, a couple of days in advance before the 28<sup>th</sup> we'll come back to these issues, we'll look at the compendium of issues and proposed solutions just so we have good context. We'll talk about where do we route this and we'll talk about for what purpose and timing based on analysis or recommendations from ONC.

If there are no other comments from Workgroup members we'll go to public comment. So, do we have any comments from Workgroup members? Thanks everybody for sticking with us, this is an important but technically rich topic and there is a lot here. Operator can we turn it over for public comment please?

**Public Comment**

**Caitlin Collins – Project Coordinator – Altarum Institute**

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. If you are on the phone and would like to make a public comment please press \*1 at this time. We do have a comment from David Tao, please proceed.

**David Tao, MS, DSc – Technical Advisor - ICSA Labs**

Hi, it's David Tao from ICSA Labs, thanks for the opportunity. I think this committee perhaps in conjunction with the Policy Committee's Meaningful Use Workgroup could really help focus the effort by prioritizing what areas need discrete data consumption in a receiving EHR because that's where all these problems that Mark mentioned really arise.

As Mark pointed out, it's not an issue so much for EHRs to receive and properly display a CDA, a Consolidated CDA, they can do that, but it's when they have to try to consume the data and integrate it into the EHR, when these multiple vocabularies and multiple places data could be, can confuse them.

So, it's important to notice that Stage 2 certification only requires the consumption and integration of medications, medication allergies and problems, and so while it would be very difficult today to consume for instance procedures or vital signs given the issues that Mark mentioned, those might be types of data that actually few vendors are actually trying to integrate because they aren't required to by Meaningful Use.

But if the committee is looking towards 2017, as it sounded like you were likely to do, rather than trying to change retroactively Stage 2, then I recommend that the committee, you know, again in conjunction perhaps with Meaningful Use Workgroup, prioritize what types of data are important to consume and within those areas then where do these ambiguities that need constraints raise their heads, then that would really help to narrow down the efforts to where it is most important rather than just saying they have to consume everything and boil the ocean and make it, you know, an insurmountable task. So, that's my suggestion, thank you very much.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Thank you for that comment, very helpful. I think that concludes our discussion for today, we'll see you all on the 28<sup>th</sup>. Mark thanks to you and ONC for background work and if we can get some materials in advance we'll have a great discussion on the 28<sup>th</sup>. Any other order of business? If none, I think –

**Joe Heyman, MD – Whittier IPA**

I –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yes?

**Joe Heyman, MD – Whittier IPA**

This is Joe, I was just going to say, another area where they might get the information that I mentioned earlier –

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Yeah?

**Joe Heyman, MD – Whittier IPA**

Was from health information exchanges that are in rural areas.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Ah, fair point. Yeah, I think we want to understand what that question mark about HIE is. I'm not sure I got that whole context but maybe what you described is a good reason. Okay, I think with that we stand adjourned. Thanks, all.

**Joe Heyman, MD – Whittier IPA**

Bye-bye everybody.

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

Bye.

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

Bye-bye.

**Cris Ross, MBA – Chief Information Officer – Mayo Clinic**

Bye.

### **Public Comment Received**

1. I had a question related to nullflavour. Some sections are required in one document type, but not in another. In this case we do not have to send the information even if it is there in the EHR. eg. Admission/Discharge Dates in Inpatient Referral Summary. So which is the best way to put this node in C-CDA -> as an empty node or nullflavour?
2. One more discrepancy in the medication section - In ONC test data for one criteria, they expect only active medications whereas in other criteria they want inactive meds also. There should be some consistency here.
3. Why is encounter diagnosis not part of Active problem list section? (this question is based on the Test data from ONC for MU 2014 Certification)