



## Joint HIT Policy and Standards Committee Jason Task Force Final Transcript September 16, 2014

### Presentation

#### Operator

All lines bridged with the public.

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

Thank you. Good morning everyone, this is Michelle Consolazio with the Office of the National Coordinator. This is a meeting of the Joint...this is a joint meeting of the Health IT Policy and Health IT Standards Committee's JASON Task Force. This is a public call and there will be time for public comment at the end of the call. As a reminder, please state your name before speaking as this meeting is being transcribed and recorded. I will now take roll. David McCallie?

#### David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Here.

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

Micky...hi, David. Micky Tripathi?

#### Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative

Here.

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

Hi, Micky. Andy Wiesenthal? Arien Malec? Deven McGraw? Gayle Harrell? Jon White?

#### P. Jonathan White, MD – Director, Health IT – Agency for Healthcare Research & Quality (AHRQ)

Here.

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

Hi, Jon. Josh Mandel? Keith Figlioli? Landen Bain?

#### Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium

Here.

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

Hi, Landen. Larry Garber? Larry Wolf?

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Here.

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

Hi, Larry. Nancy Orvis? Troy Seagondollar?

**Troy Seagondollar, RN-BC, MSN, UNAC/UHCP – Regional Technology Nursing Liaison – Informatics Nurse – Kaiser Permanente**

Here.

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

Hi, Troy. And Wes Rishel?

**Wes Rishel – Independent Consultant**

Here.

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

Hi, Wes. And from ONC do we have Debbie Bucci?

**Debbie Bucci – Office of Standards and Interoperability – Office of the National Coordinator for Health Information Technology**

Here.

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

Hi, Debbie. And Kory Mertz?

**Kory Mertz – Challenge Grant Director – Office of the National Coordinator for Health Information Technology**

Here.

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

Are there any other ONC staff members on the line? Okay, with that I will turn it to you Micky and David.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Okay, great. Hi, this is Micky; I think it is my turn today to kick us off, right David? So, and Michelle, just to note, we did get a note from Josh Mandel who said he would be 30 minutes late, so we can expect him to join sometime here soon. So, welcome everyone, thanks for joining this meeting of the joint...of the JASON Task Force. We...today we wanted to cover a few things, our...sort of do a debrief of the Policy Committee and Standards Committee meetings that we had, and got a lot of great discussion in both those sessions, as well as some great feedback. And then talk about the sort of the plan ahead as we think about taking that feedback and then incorporating that into our thinking about what we need to cover in the next four meetings to get us to the recommendation point for the October 15 joint Policy and Standards Committee. And I think as you will see, David and I have very high confidence plan that will get us from here to there. But, would obviously love the workgroup's perspective on that as well.

So, why don't we jump ahead to slide 2 and I am going to lead us through a discussion of the Policy Committee and Standards Committee feedback and a little bit of the work plan here. And then David will cover the deep dive into the...into a couple of substantive areas that we want to talk about today, which is the definition of a public API and corresponding architecture and sort of fast-tracking APIs and thinking about that as sort of part of the pathway forward here. But we will get into that in a second.

So, on slide 2, we just wanted to update you a little bit on...you have all seen this as the charge of the group. We did, on that last bullet; we did add that in the Policy Committee and Standards Committee's presentations because we did get a request from Dr. DeSalvo to add to the charge high-level mapping of the PCAST Report, the 2010 report, with the JASON Report. So, we have added that into the work plan, that is something that we will sort of do offline in parallel and then feed it back to show all of you, probably a couple of meetings down the road here. But just wanted to alert you to that addition to our...to the original charge. Next slide, please.

So on slide 3, you have got the meeting schedule. We are here on Tuesday, September 16, we want to refine our recommendations and, as I said, we will dive down into a couple of substantive areas as well. And then we have three more meetings after this one before our joint meeting. So, we have...the good news is, we have got some time and we have got a good number of meetings to have some pretty rich discussions around some focus topics. I think as all of you know, though, there is a...we need to have a lot of focus over the next...over this meeting and the next three in order to get us to a good place to have some robust recommendations. But, it feels like we are on a good path here, but want to make sure that all of you feel that way as well. Next slide.

So diving down a little bit into the work plan for the remaining meetings; today, as I said...so, just to step back for a second, we got some great feedback from the Policy Committee and the Standards Committee. And as David and I reflected on that, the things that seemed to come out both in our sense of where are the gap areas that we probably want to focus a little bit more on as we have started to string together the recommendations that have come out of this task force. And sort of pairing that with the feedback that we got from the Policy Committee and the Standards Committee as well directionally.

It seemed like two things popped out as substantive areas that we need to dive down further into; one of those is this idea of what is a public API? I think, as all of you know, that term is strewn...thrown around all through the JASON report. There is open API, there is public API, and there is confusion about open source and whether or not that relates to any of that. So, it seemed very clear, I think even going into the Policy and Standards Committee meetings, to both David and I that we need to have a concrete, operational definition of public API in particular, because we start to use that term.

And then we also introduced the term, orchestrated architecture that we will talk about in a little while. But that was something that we had introduced in thinking about what the JASON Report seemed to be suggesting about how this type of centralized orchestration could work. So, that came out a lot in our Policy and Standards Committee's conversation. So, we think that we need to define that so we have got sort of a discussion today on that and starting to discuss how we might fast-track an approach to API standards. I think as we have discussed, we are sort of in this in between world in this transition period of having a set of standards that can meet document level query and retrieve kinds of functionality and fastly...quickly moving toward a RESTful approach, you know, FHIR being the leading candidate there. And we are sort of caught in between here, about sort of the classic dilemma of how much do you want to focus on an older but existing standard versus anticipate a future standard. So, want to talk a little bit about that.

The other key topic, so, public APIs and the idea of loosely coupled or orchestrated architectures was one topic that we thought really needs some richer discussion here on the task force. And the other is the idea of privacy bundles. I think as all of you may remember, the task force repor...the JASON Report talks a lot about privacy bundles, but doesn't dive down into the concept that much. So on the one had we don't have a whole lot to go on, on the other hand, it's sort of a critical component, we think, of some of what they were suggesting and it seemed like a pretty important concept in general, as we think about privacy.

And as we dive down into this, one of the key things that will come up, I think going forward is, if you have an open API or a public API kind of concept, what are the rules of the road for the specific use cases? One is provider, but you also have consumer use cases and how does that...how does an understanding of how privacy bundles might fit in that sort of construct, I think that is probably an important conversation for us to have.

So, that...we have targeted that for the next meeting and then we have a couple of other things that we need to get done; one is we have annotated as a part of the task force the architecture diagram, as all of you may recall. We want to revisit that, get some understanding of how we think we might use that in our recommendations and in our report going forward. And then the JASON to PCAST mapping, but those are sort of two parallel activities and the key activities are this definition of public API and definition of privacy bundles, or a discussion of privacy bundles.

And then the anticipation would be that sets us up nicely, hopefully, for meeting 3 and meeting 4 to have a draft of our final report, which we will convert the PowerPoints to a Word document. And then we can sort of have hopefully 1-1/2 to perhaps 2 full meetings to refine that final report. And I am sure it will all work just like that. You would agree with that, right David.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Oh, absolutely.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Okay, anything else you would like to add, David, on the work plan.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

No, I think you have covered it well. I think we are still trying to schedule some outside input on the privacy bundle discussion, so there is a chance that we might flip the order of meeting 2 and meeting 3, depending upon what we can arrange from some outside expertise that we would like to invite into our group. So, don't be surprised if that changes.

The thinking, just to add a little bit of comment on the...this notion of defining what a public API is, is my thought is here that we may kind of create some building blocks of what does this mean, what does that mean. That those building blocks could then be woven into a high-level statement of what our top recommendation is, so, a little bit more of a structured approach that can create a more concise summary of what we think the JASONs got right and what our recommendation would be. So today's task is to start working on some of those lower level building blocks which we would then weave together into the high-level statement of what we think we would do with a public API now that we have defined it. And how we would orchestrate the architecture now that we have defined it and so forth. So, there is a method that may not be quite evident here, to where we are trying to do.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Great. Okay, so why don't we dive down first into the review of the Policy Committee and Standards Committee discussions. David actually did, I think, a terrific job at trying to pull some of the specific comments that came out from some of the individuals. And there is a caveat there noted on all the slides that no one should sue either of us for perhaps getting...either attributing a quote to the wrong person or perhaps paraphrasing in a way that they don't think reflects what they actually said. But this was an attempt to try to get some of the richness and the flavor of those discussions for all of you to be able to take a look at.

I won't read through each one of these. What I would suggest that we do, they are here really for you to take a look at, certainly happy to dive down into any specific areas if you would like. But what I would suggest is that we jump ahead to the major themes coming out of that, which is slide 9, if we could jump to slide 9, which is Policy Committee and Standards Committee major themes. So we got, in general, sort of five major themes that I think came out of that conversation. One is the idea of general agreement that seemed to be across both of those bodies to move forward to more powerful data plus document APIs, which was one of the things that this task force had in its preliminary recommendations as one of the things that we think that the JASON Report got right.

And so really that quickly turned into not a question of whether we ought to be doing that but it was more about the speed and the timing of how to do that, how to do it within the context of Meaningful Use Stage 3 and 2017 edition certification. And specific conversations about how to sort of launch a focused, fast-track implementation around FHIR, considering C-CDA and some core use cases as being sort of a set of things then that might be just ready enough to be able to incorporate into, perhaps, 2017 edition certification. But...so that was a lot of the conversation, again not about whether that is a good idea, but how do we fast track it.

The second was sort of the thought that orchestration of loosely coupled architectures is a more feasible or a better approach than top-down control. And again, you may recall this was one of the...in our task force preliminary recommendations, we did specifically have a bullet that said that top-down control is not the answer here, that sort of thinking about a loosely coupled architecture approach makes much more sense given the heterogeneity in the market. And the fact that there is a lot of activity going on within specific architectures or within specific networks that are already being deployed and doing a ton of stuff.

So the idea is how do we think about focusing on loosely coupled APIs and robust data element profiles to ensure semantic interchange? But thinking about that, obviously when you say you want to have loosely coupled architectures, you specifically then have to...it begs the next question of, okay, so what is going to be coupled and how do you define that? So that, I think again, the conversation moved quickly to that. There was...that also begs the question of, are there some specific services that may require higher degrees of centralization? Identity authorization, consent and those could be some combination of policy and/or technology centralization. So, that is an open question, I think, some for...to the extent that we can offer some perspective on that, I think that's great. But I think there was a recognition that there...it also begs that question of, what does get centralized and what's sort of the interplay or the combination of policy and technology that gets you to enough of that centralized orchestration to make the entire system work as a sort of a loosely confederated system.

The third point was, I think there was a general agreement that market forces should be leveraged as much as possible, although I think that there was concern expressed by some of the individuals, and I think you see that in some of David's concepts, about gee, we can't be just relying on the market. And I don't think that...that's not what our task force preliminary recommendations said, but I think that that just reflected not that people hadn't fully read it, but just a concern that the market left on its own probably wouldn't get us to the...even the loose coupling that we are hoping for here. So, I think that...but there was a recognition that the market has to be leveraged as much as possible.

And to the extent that there was any sort of back and forth, I think it was more around this point. About what does that mean and what is sort of the interplay between the sort of the government having some strong role in this and the market forces emerging from the bottom up that are clearly moving forward very quickly. And sort of a thought that there are new business drivers that are fast overtaking Meaningful Use, which is a good thing, all of them point in the same direction or directionally toward greater interoperability that regulatory approaches should be light and nimble.

There were some people who felt very strongly that the government needs to play a strong role here. But again, the thought then is, well what does that mean? And what's an operational concept that will sort of cover both of these bases of wanting to have some centralized orchestration, but really needing this to be something that is inherently market oriented. Incentives should target interoperability; this is the idea of the loose coupling, not just intraoperability. And finally, the thought that we do need to monitor for undesired barriers that emerge along the way that inhibit interoperability and the thought about how do we really do that and what does that mean?

Fourth point, agreement that public APIs introducing new governance ecosystem questions so, as we think about, you can have sort of the technical ability to expose an API that allows a certain type of access to data level information as well as a certain document level information. Whether those are static or constructed on the wire, however that works, obviously you can do that technically, but there are a whole set of business, legal considerations that go along with that that are not a part of the technical piece.

And I think certainly as we have looked at what is the market experience with Direct? I think, and as we saw in hearings that we had at the Information Exchange Workgroup earlier in the year, a lot of the issues there aren't necessarily about the technology, or aren't exclusively about the technology. They are about the market ecosystem that needs to develop around that. So, to the extent that there is...we want to be able to recognize that and take those lessons up front.

And the second point on that is, as we are thinking about sort of three core use cases for the public API architecture, one is the provider use cases, but we also have consumer and population health research as three broad categories of use cases, in alignment with the JASON Report. And we need to think about the governance ecosystem, questions related to those as well.

And then finally, and this is somewhat related to the previous point, an agreement that privacy policies have got to keep pace with technology advances. There was, in the Policy Committee there was sort of a really rich conversation that people had about whether I'll say this in somewhat crass terms, but whether patients can be trusted with the information that might be available through an API. And not that they are irresponsible, but do they know what they are getting into.

I think was...and there was some...certainly some conversation about a little bit of concern that just opening that up without sort of the appropriate guardrails around it may put patients in the position of exposing data or having data exposed in a way that perhaps they have given permission to or in fact, even enabled, but not fully understanding the full implications of it. Versus the converse view, which would be, no, just tell them what is going on and let them make their decisions. So again, a lot of thought, I think, needs to be given to that question as well.

So, that's the high-level, let me pause here and see if...David is there anything else that you would add to this?

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

No, I think that captures the discussions that we had pretty well. I would say, there's...from the two groups, the two dominant themes of where we have work to do, we collectively in the industry and ONC have work to do are the question around the speed with which we can make this transition to the more powerful APIs, number one. And then number two, the role of government in getting us there. Those are the debatable points or the points that I think are going to be complicated decisions. There was not really any substantial argument about the need for these more powerful APIs.

There was some...a fear that the success of the currently deployed APIs was getting underplayed by all this conversation, we had a couple of folks raise that point. And I think that the focus here is on where we are headed, not where we are today, so I tried to reassure the folks who were concerned that we might be underplaying the current APIs that we are not by any means saying that we abandon those, we are just talking about, where do we go next? And we know we need to get to a more powerful set of APIs, so let's focus on that, fully acknowledging the value of the currently deployed systems. And I think we have captured that in our report. But that did come up, not captured in these slides here.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yup. So, any task force members. I know Larry and some others are on the Policy Committee and I know Kory was there as well, any other thoughts that you have on this before we move into the discussion of public APIs and architecture.

**Gayle Harrell, MA – Florida State Representative – Florida State Legislator**

This is Gayle, I'd like to...

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Oh Gayle, hi.

**Gayle Harrell, MA – Florida State Representative – Florida State Legislator**

...apologize for...coming on, but I do want to commend you. You really caught the spirit of what was said. And I just want to reiterate once again that I think it's such a broad issue when you get into especially the governance issues, and we did have a report later on in the committee about governance. But I think this committee needs to weigh in heavily on how, as we move forward with APIs, what we are going to do to make sure that this is all appropriately handled and that there are mechanisms in there to protect patients, protect privacy and make sure that there is appropriate use of APIs.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Great. Thank you. And actually that does bring up a good point that one of the specific things that we were asked by Paul Tang was to have some sort of coordination in the back channel between the Governance Sub-workgroup and this group. Because while Governance isn't technically sort of a part of what we are looking at...looking for...looking at with the JASON Report, I think as all of you know, the JASON Report specifically just calls out governance and business as two areas that are important, but that they are not going to address.

On the other hand, some of our recommendations have direct implications for governance like our fairly strong recommendation that top-down control is not the answer here. So, his recommendation was that we have some back channel coordination. So, we have been having ongoing conversations with that Governance Workgroup and I have been participating a little bit in that sub-workgroup to make sure that we have got as much alignment as possible.

**Wes Rishel – Independent Consultant**

This is Wes Rishel. I have a question.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yup, go ahead, Wes.

**Wes Rishel – Independent Consultant**

The...can you just elaborate a little bit on the top-down governance is not the answer with regards to what. The specifications, the trust framework; I mean, where do you see that applying and what are the alternative scenarios as opposed to top...

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yeah and why don't I take a first stab at it and then David, if you have thoughts, please weigh in. I just...our recommendation, just to focus on what we said, was if you recall in our preliminary recommendations, it was specifically looking at architecture. And so, where...we were focused on there is that a top-down, single architecture does not make sense in a market that is highly heterogeneous and has elements that are greater or lesser degrees of advancement. So, it was speaking specifically to that, but I think as is covered in one of these bullets there. There are, I think, an open question for us as we think about this is, are there other elements like technical, like identity, like authorization that may have degrees of centralization that have some aspects of being sort of top-down in some sense, either from a policy or technology perspective. Those are kind of open questions and David, would you agree with that?

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, I think Wes that if...depending upon what parts of the JASON Task Force Report...the JASON Report that you read, you get varying degrees of a sense of how sort of constraining the architecture needs to be. And at points in there, they suggest that existing systems should all be rewritten to use more modern technologies and other places they admit to heterogeneity and diverse implementations that are loosely coupled through standard APIs. So there is some confusion in the report itself about what they meant by architecture from a point of view of how constraining or how specifying it was.

So in our deliberations and in what we have surfaced to the committees, we basically said, we think the approach is to coordinate but not to top-down specify the architecture. So, we surfaced those recommendations and I don't think we got any strong feedback to the contrary, although we did have a couple of members, most surprisingly on the Policy Committee side, who thought that these APIs should be required by the government, not just something that the market evolves towards. So there wasn't any discussion that we needed an Office of the Chief Architect for Interoperability.

**Wes Rishel – Independent Consultant**

Thank you.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

And no one was proposing that. Does that make sense?

**Wes Rishel – Independent Consultant**

Yeah, yeah. I get the scope now, I am just looking at these other bullet items and thinking about go forward approaches and wondering about the centrality there, but I am obviously in a different context than this particular bullet is right now.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Okay.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah and we are going to...touch...we will touch on some of these questions again. We're not...this isn't the only time to discuss them. I just...this is an attempt to summarize sort of the themes that came out of the two presentations and then I think at the end of today's presentation, we will distill these into kind of go forward questions. So, you know, net-net, what do we actually recommend about this and about that and about the other? So, we will get there.

**Wes Rishel – Independent Consultant**

Thank you.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Maybe we could move on to that part of the discussion?

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yes. Yup.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

So let's, I'll take the handle here, let's go to slide 10. So, I don't know if my take on this is something that others will agree with or not, but when I heard the term "public API," I scratched my head and said, what does that mean? And it is used 7 or 8 times in the JASON Report, it is never actually defined. But it occurred to me that really what a "public API" means is it is kind of an intersection between some standardization of an API mixed in with some notions about governance and how that API is used, which is where the public notion comes in. So I just sat down to try to tease apart what we might mean if we were to have a final recommendation that says that we should seek to achieve a public API across the ecosystem that the JASON Report was discussing. What the heck would we mean by a public API?

So, this is just my crack at it, and I chose to try to use the standards language of shalls and shoulds and mays and so forth to imply the degree of bindingness of the notions here. And just again, take it with a grain of salt, let us...just let's have a good discussion as to whether it makes any sense or not. But let me just walk through what I was thinking and here's the gist of it is that if we had a public API that we would expect that it shall support anyone who...let me put it this way. A public API is something that is implemented somewhere, there is a definition of it, but what we are going to talk about here is the actual implementation of it.

That an implementation of a public API would be required to support some notion of a core standard subset that everybody who has implemented the public API would be expected to do. And it is an API plus the associated profiles, if we are speaking in terms of FHIR or any other approach, the data element definitions. So when I talk about an API, I am going to imply the profiles that belong and govern how you use that API. And if I forget to say profiles, it is not because it is not important, it is just I am lumping them together.

And we think that the public...the implementation of a public API should also be required to support publically available documentation of that API. Now to the degree that the API is standards-based, that may be simply a pointer to the standard if, in fact, the implementation is completely consistent with the standard. So hopefully, that is kind of a freebie. And then we said, it may support, depending upon the implementer's choice, it may support custom extensions either on the API side, actual additional API capabilities and/or on the profiles, extensions to the profiles, which could be profiles against the core API as well.

So, you could imagine a core implementation of an observation resource that supports a standard set of query capabilities and a particular vendor says, well we have more powerful query capabilities and we would like to expose those to our users as well, even though they go beyond the core standard. The expectation here would be you could do that, it would still be called a public API but you should document your extensions in a public way. So the “should document” is referring to the extensions.

Then the next bullet point is where the intersection of the API meets governance. And the way I expressed it here was should enable access to and use of the API in a way consistent with API governance rules of the road and best practices. Now, I realize I am sweeping the dirt under a different rug because we haven’t defined what those are yet, that is going to be a task that we have to get around to later in our discussion. But the point here is that if you host a public API, you agree that that API...you should enable that API to be used in a way consistent with governance.

And then next point is that the API should be validated against rigorous certification tests and based on some of the learning from the CDA work, I have suggested here that the certification tests should be controlled by the standards entity that governs the core specification itself. It may not be that that entity actually writes the certification test, but there needs to be tight coupling between the people who are responsible for the definition of the standard and the test that proves you are compliant with the standard, so that we don’t get some of the fragmentation that we have seen in the CDA space.

And then final point is that the implementation of the public API should be accompanied by a vendor-supported sandbox that enables testing by external entities, assuming again that they have the proper...they have met the criteria to have access to that API. And the thought there was we got really strong feedback from a lot of the folks who consume APIs that just reading the spec is never as good as having a sandbox where you can actually try your module or your App and test it to make sure that it works as you interpreted the API.

So, that’s a starting point, I would be curious to know whether people think this approach makes sense and then, of course, whether the details are right or wrong. Do some of these shoulds become shalls? Some of the shalls become shoulds? What do you think?

**Wes Rishel – Independent Consultant**

Wes Rishel.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, go Wes.

**Wes Rishel – Independent Consultant**

So a couple of notes and I...some of...at least one of these points I am prepared to argue vigorously for or against the point. But, first of all, I would like to see some notion of a sustained interface contract in the sense that using this standard or something implies a behavior on the producer of the implementation of the API of stability of the API over time.

Not that that's an absolute and forever, but that there is a...you get out of the...having to rewrite your application every time the operating system changes phenomenon that has gone on so much in the industry. Related to that, I think there needs to be support for asynchronous update so that not all entities, and this could be just another way of saying the same thing, not all entities have to update at the same date certain.

The third comment that I have reverts to your third sub-bullet, may support custom API and/or custom profile extensions. The horror of Z-segments comes to mind in this thing and I wonder if it say, it should support custom extensions in a standard way. In other words, certainly if you look at the work that is being done on FHIR extensions, there is a syntax and methodology for extensions that itself could be standard, even as the extensions produced using that syntax and methodology are validly extensions. That on the one hand increases a whole lot of ability for reuse and comparability and quick adaptation. On the other hand, it inherently limits the things that you can extend, to some extent, to those things that can be described by the methodology. Thanks.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Wes, this is David. I think those are excellent points, I appreciate the thought and the detail as someone like yourself, who spent a whole career worrying about standards, I felt very nervous putting this down. So, I appreciate those suggestions. I will react most specifically to the thing about custom extensions being done using the standards model for extensibility. I like that, if that captures the sense there. I think that makes a lot of sense and makes a lot of sense. Now, it is possible for someone to expose an API completely unrelated to the standard that simply does things that a client needs to be done, and maybe that is fine and that is just not part of the so-called public API.

**Wes Rishel – Independent Consultant**

Yeah, I agree, but I think including this regular method of extensions and maybe even going so far as certifying the ability of a piece of technology to adapt to an extension, that may be a little overboard. But fundamentally getting into that which is recognized as a requirement for using the standard...extension model, I think is very valuable.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah. No, I think that is a good point. What do others think?

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

So this is Josh, I wanted to just comment on the notion of a public API versus like a specific public API that we would embrace or require or help orchestrate. So this definition that is on the slide here seems to be about a specific API that we would want lots of different people to implement, maybe independently. Because I think in general, the definition of a public API could be much broader, somebody...I would...as a healthcare...for example, might have a public API that is not based on any standards. But they publish a description of how it works and they make it widely available, then various people can use it, I think that would still be considered public. So, I just...I wouldn't want this definition to be the definition of public API in general, because it is more like the kind of public API that we specifically want to use here.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, this is David...

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yup.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

...I am certainly not intending to create a new IETF definition of public API. I couldn't find such a definition, but I suppose we could say a public API in the sense that the JASONs suggested it as the constraint here.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Or for healthcare uses or something like that.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, or as part of a nationwide infor...interoperability roadmap, if that roadmap refers to the public API, then we would try to...I mean, the gist of what we are capturing here is to me the...I mean, it's obvious but it wasn't necessarily obvious to everybody who read that report. That you can implement a standards-based API but do it in a way that is in no way public, meaning that you won't let anybody use it. In other words, you are not respecting the governance models. Or you could implement a public API that you distorted in some way so that it broke everybody, even though it was more or less the public API, and that's not something that would be public, either.

So, trying to kind of sense...capture a little bit of the notion that a public API sounds a little bit like an API for the public good, that's not exactly the right words but there is an aspect of that implied with that word public. Because I think the JASONs are going beyond just the notion of a standards-based API. And I think we would want to anyway, in terms of our own...I mean again, my opinion, that we think there is something about how you expose it and how you let people use it that is important to be captured in the recommendations, albeit swept under the governance rug.

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

So that makes perfect sense to me. We are describing the public API that we think we need for healthcare.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Right.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Right, right.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, good.

**Troy Seagondollar, RN-BC, MSN, UNAC/UHCP – Regional Technology Nursing Liaison – Informatics Nurse – Kaiser Permanente**

Hi, this is Troy...just a comment...

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

When it comes to...

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Go ahead, why don't you...Josh, it sounds like you had a second point and then we will go...and then Troy.

**Troy Seagondollar, RN-BC, MSN, UNAC/UHCP – Regional Technology Nursing Liaison – Informatics Nurse – Kaiser Permanente**

Thank you.

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

Okay, thanks. The second point was just when it comes to the governance question that David just mentioned, this seems really important, the question of, well who can use this API and under what circumstances? So, I had a particular hospital that uses a particular EHR vendor, who is in control of what Apps can connect or what clients are able to access these API calls? A should in that sense seems awfully weak because it seems to say that a vendor could make this API and not, in fact, expose it for access and use, even when the governance and rules of the road were met. But they wouldn't be obligated to do that that seems a bit weak as far as principles go.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, so this is David. I put those in italics to spark that debate. So your proposal, Josh, is that that would read, shall enable access to and use of API in a consistent way with governance rules of the road.

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

Yeah, we've already swept the question of what those rules are, as you say, under the rug. I don't think we should keep them under the rug and say they are optional.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Right.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

No, I think that is a great point.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

This is Micky; I think that is a great point, too. And it is the contingent on there being acceptable rules of the road is the important point of that, right? You are not saying you have to open it up to everyone, we are saying that assum...on the assumption that we have some rules of the road that we all recognize and understand, it is in that context that you shou...shall enable access.

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

Okay, the follow up there then becomes, the rules of the road, is there one road and one set of rules or are those rules every organization makes its own rules?

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Right, right, right. I think that is part of the question. It seems to me if you leave that off, I don't see how that could be a shall.

**Gayle Harrell, MA – Florida State Representative – Florida State Legislator**

This is Gayle; I want to jump into this conversation, too. This is where the crossover between governance and this JASON Report come together and I think it is very important we have that conversation, whether it's back channel or actually have a joint meeting with them to discuss that whole aspect.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yup.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, that...Gayle that is exactly why I am suggesting that this phrase that we have invented here called public API is the place where those worlds intersect. It is the intersection of the standards work with the governance requirements on use of the API. And to Josh's point, if we turn that into a shall, I think it does clarify his earlier point that we have to be a little bit more specific about which public API we are talking about. So, we will need to scratch our heads and come up with the right name for it, the JASON-style public API or something like that. But let's...we will take that as a "to do," but I would be willing to accept the shall that Josh suggests. I mean...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Hi, this is Larry.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Hold on Larry, I think Troy was in the queue and then you.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Go ahead.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah.

**Troy Seagondollar, RN-BC, MSN, UNAC/UHCP – Regional Technology Nursing Liaison – Informatics Nurse – Kaiser Permanente**

Thank you. So anyway, it is exactly what Gayle is talking about, I mean we are at a crossroads here and my thoughts are, I mean since we have certified EHR technology these APIs will be interfacing with that. I mean, my thoughts are that they need to at least meet the minimum requirements that we put in place for that certified EHR technology. And from there, even putting them through the open testing model to make sure they do what has been proposed, and that way we can actually keep track of which ones are compliant and which ones are not.

HIPAA of course is always a big thing, I was just reading a report that came out on HIT.gov this morning about what the concerns are from consumer sides and privacy is always up there. So I think at the very least, in going through an open test model we need to make absolutely sure that the information is protected and that if a breach does occur, I mean we delineate who is responsible.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

So Troy, this is Micky. One question, just elaborating on that, so if we were thinking about this in the Meaningful Use EHR certification context, one could imagine one piece of it, which you covered, which is that certified EHR technology would have sort of the certification requirement that they meet whatever definition we have for a public API. Could you envision the corresponding Meaningful Use behavioral requirement that a provider organization is required to expose the API under certain rules of the road?

**Troy Seagondollar, RN-BC, MSN, UNAC/UHCP – Regional Technology Nursing Liaison – Informatics Nurse – Kaiser Permanente**

That would be one aspect of it, yes. I mean obviously the devil is always in the details, but I think it needs to be put on the table so that we can begin to piece that together. Because that always seems to be the big part, you come up with these great ideas and you develop these APIs, put them into play and then something happens. And it would be nice if we had the discussion at some point in time to say okay, not so much for the governance part, but just to really make it clear as to what the expectations are from any party that actually utilizes this technology.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, so this is David. When I first lay this slide out I started with kind of a top bullet point that says, I'll say vendors, but what I mean by vendors is any stakeholder in the ecosystem that we are talking about here, but vendors shall implement a public API that is tested via certification. And then I said, okay, what does that mean? What is a public API? And then I started working on the public API notion. And then I realized, well, the shall implement public API versus should implement a public API is the core nugget of our tension between how much role does the government play or not.

So I wanted to focus in on what is the public API that we are talking about and then come back and revisit the question, should a vendor be required to implement it, number one. And then number two, if the vendor has implemented it, should a provider who is using that vendor's tools, be required to turn it on? And those are the hard governance questions that I think we will come back to. So, I was trying to orthogonalize those things which are really wrapped up in the notion of a public implementation of an API versus the outside forces that either require you to do that or not and require you to use it or not or expose it or not. So, we will need to weave these all together into a story that reads well and I agree this is a little bit of the bottom up part of it. But I think it is a good just Troy your clarification and maybe Micky it was your question is, there are multiple levels the vendor could be required to implement it, test it via certification of EHR technology and then there is an independent question of whether a provider organization that has it implemented is required to turn it on.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Right. I think Larry was next in the queue.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Sure, so I'll pick up on a couple of points that are in the current discussion and then maybe a couple of others. So we started to comment about vendor, provider, sort of the in...how these things get instantiated and I wonder if, in fact, we need that but as a side discussion, not to the core piece of this? Because if I think about sort of the example of HL7 develops something like FHIR and various vendors implement it and the vendors could be big vendors EHR, they could be little vendors doing niches and then various keepers of data then choose to standup that interface as a way to get to the information that they have. And those data keepers might not be healthcare providers as we usually think of them. So, I think we need to tune our language here to sort of represent this diversity of who does what and maybe think more about sort of what are the roles involved with an API and implementation of the API and using it to get to the information and initiate actions that people want if they are using the API.

I really want to support your notion of sandbox in here. I think that we heard that pretty loud and clear and I think it goes to the whole desire that these are not just paper specs but actually are live. And I think about all the work that the FHIR people are doing, and I apologize, I spent yesterday immersed in that world, but I think there are a lot of valuable lessons there. And one of them is how robust and fluid their documentation is, it is intended for use, so they really thought very deeply and effectively about how you make documentation that is valuable for people who are trying to build these APIs. And I think it is sort of a lesson in contrast to the ever-growing thicker tomes about the Consolidated CDA and how that was a step forward, actually and the many, many documents that got consolidated in that notion.

We are dancing around that the APIs are making data available and I know that that is included in your notion of core profiles, but I wonder if it doesn't need to be explicit in here somewhere. Because, like I said, to me yesterday spending time with the FHIR folks, it was oh, this is not just how I issue requests and the formatting I use, but it actually is a pretty deep look into the data that is being handed back and forth and trying to simplify a lot of what is in CDA. So, I think that because these APIs are intended to not just be access points but access to data, that data ought to be explicit somewhere in our principles here, part of the definition.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yes, this is David. I tempted...I toyed with writing this or laying this out specifically referring to FHIR and FHIR profiles, but I backed off and just left it a little bit more abstract because...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Yeah, and I think it should be. I think it should be more abstract than FHIR.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yes, so the decision to map for FHIR may be...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

(Indiscernible)

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

...a subsequent decision, but yes, I wanted to keep it that way. So I think that your...when you use a word like a profile, if you've been to the HL7 conference, you know what that means, but not everybody will. So maybe we need a little bit more clarity as to what a profile is. I think that is a good point.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**  
(Indiscernible)

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**  
Landen Bain, I have a comment also.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

One quick other point and then I will back off. So, the other piece is that the APIs are multidirectional, right, they are bidirectional, they are not just a get, they are also a put, you can send data, you can take actions, and they are executable if you will. And while I don't know that we are at this level of framing the API, I think it is really important to capture somewhere pretty early on in our presentation that the APIs are fully functional, if you will. That this is not intended to be just a review of things but is to really enable robust ecosystems of Apps and capabilities and interconnections between systems. So I am thinking read/write actionable or something as an aspect of the API.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

The...this is David, I think that is a good point but the sense of what I meant by the core API...embedded in that core API would be the definitions of which ones are read-only and which ones are read/write. I don't think we would want to go and say that every API endpoint must be read and write because I think some of the FHIR stuff in particular is really not designed to create a...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**  
Right.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

(Indiscernible). So it is something that gets captured in that what is that minimum subset, how deeply do you go? And that is something probably that stages over time, which raises Wes' concern about asynchronous upgrades, capturing that thought as well. I wanted something that would fit on one slide...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**  
That's interesting...

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**  
...that's all.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

I thought it was interesting that the only required functionality in a FHIR server is the conformance resource, to be able to tell the world what it does.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**  
Yes, yes, good point.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**  
So, a very clever piece of bootstrapping.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yes. Yes, there is no lack of cleverness in FHIR; I am constantly impressed by the cleverness. It is really thoughtful.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

Landen Bain in the queue.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah Landen, go ahead.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

So, I would like to echo what I think I heard Larry say in his first point, which is; we need to broaden our thinking about the APIs and not necessarily assume that we can anticipate everything that is going to be participating in the ecosystem. As the representative of the research community, I feel totally inadequate to that task by the way, but there is a sense and Denise Warzel and a few others are cooking up some more formal response to this. That the APIs and the emphasis on FHIR are very healthcare centric and the research community is not necessarily going to be able to conclude this work within the FHIR concepts, there are going to be additional research concepts and there is a somewhat different view of things coming from the research side.

And I think we need to leave some thought space open to a more...to a broader kind of semantic interpretation across the boundaries between healthcare and research, perhaps healthcare and public health that are not quite as tidy, certainly solvable. But I think I just wanted to pos...I want to just post a bit of a caution that the emphasis on this as a healthcare architecture, there is some...I actually subscribe to the belief that research, especially drug development research, is a separate industry. And we have to have enough flexibility in these public APIs and that we can cross over the boundaries to other industries.

And this is fully respectful of Larry's other comment about FHIR being a very inclusive and all-embracing thing, and it should be, but there are aspects of research that get into things like even the manufacturing of drugs that are not necessarily...I don't think it is wise for HL7 to think that they can embrace everything that has to do with the sister industries and research and to some extent, public health.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

So Landen, this is David, we have kind of toyed with the notion back and forth in our discussion about the JASON Report that they sort of seem to imply that one set of APIs could work for these three spheres that we have called out of patient care, research and consumer access. And we sort of at one point said, you know, it is maybe not the case, that research doesn't have the same set of needs as the other two. And I am quite comfortable to believe that, because I think it is so specialized and it is an independent industry that happens to be dealing with healthcare, but it is really run by a different set of regulatory rules and the like. Do you think that we need to basically carve that out and say that what we are talking about here is really the APIs that are focused on the healthcare and perhaps the consumer access side of it and not on the research side? Or is that going too far?

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

I think that is going too far. So let me be a little bit more specific. I was on a call just Friday about the CDISC has an initiative called SHARE, which is a metadata repository of research concepts. These research concepts are largely overlapping with FHIR concepts or healthcare concepts and my recommendation to CDISC, and I am part of CDISC, but internally I am saying to them, where the research concept is clearly the same as the healthcare concept, then we have to adopt the healthcare concept. In fact, not even articulate our concept, just reference it in the way that semantic technologies can do. I hope that is the direction we will take.

So, what that means, if CDISC formally takes that approach is that a lot of research concepts will be exactly the same, expressed exactly the same, the concepts are, in fact, exactly the same. And the APIs will be very, very handy for that. So I am not suggesting that we wouldn't participate in this architecture and this ecosystem. What I am saying is, there are also going to be research concepts that are different and I believe there are semantic technologies, such as metadata repositories, which can do some on the fly, very facile mapping.

I know everybody when I say the word mapping, people sort of feel like that is...we are trying to get past mapping. Well I don't think we can get totally past mapping and we can do it in a very facile way where using semantic technologies we can point from one registry to another to the API, frankly. And I think there are solutions to it, but I think it is just a little bit too facile to assume that all the healthcare APIs and in fact all the FHIR concepts are going to satisfy 100% of research. I would just argue that we need to make some pathways for I don't know, let me coin a term, slipperier APIs that include some semantic mapping.

Again, some of you know Denise, for all I know, she is on the phone. She has some strongly held opinions on this that I think are going to be making their way into the comments that are I think more strongly held opinions than that, and others have those as well. I personally believe that there...that research should be participating in this and should be using the healthcare concepts where possible and the healthcare APIs where possible. I just am arguing for a sort of humble acknowledgment that there might be needs for some broader concepts along the way as well.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

This is David. That is very well said, I think you expressed the tensions very elegantly, so I appreciate that. I took a lot of notes.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Hey, this is Arien; I want to get my name in the queue at some point.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, so Arien, do you want to comment on Landen's proposal in particular?

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

I do. I have got one additional comment relating to this slide, which is that I am not sure that this slide encompasses modularity and the notion of modular EHRs. So I am not sure what all standard core APIs means with respect to, for example, an ePrescribing module that may need and want to implement a subset.

But with regard to research, I came from a life sciences background, did clinical data management and pharmacovigilance informatics prior to joining the healthcare side. And I don't think it is as incommensurable as is being suggested. For example, it is fairly standard practice for the lab panel in a clinical trial to be fed from HL7 ORU feeds that have some additional data that are necessary in the context of a clinical trial, but a lab report is a lab report. Likewise, an adverse event or an adverse drug reaction and an adverse...an allergy or intolerance bears some significant core data elements, and there are clearly more specificity that are required in an adverse event report in the context of a clinical trial than would be required in the context of ePrescribing.

But again, there is a spare...there is a constraint of medicine and the human body that are common between them. One of the things that I admire about FHIR is that it does support the notion of extension around a core profile. So I don't think anybody would be suggesting that an API set that is applicable out of the box for the uses of clinical medicine would ipso facto be applicable for the purposes of clinical research. What I do think people are suggesting or think people should be suggesting is that there are some core concerns, some basic concepts and that there would be need for additional profiles or additional constraints on top of those that would be...that would make those core medical concepts be applicable in the context of clinical research.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

Well this...

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

So I agree that we can't, yeah, I agree that we can't assume that there is one set of APIs that are going to serve both needs of clinical medicine and clinical research. But I don't believe that there is something in FHIR that makes it out of the box completely impossible to the needs of clinical research, even with appropriate extensions and additional profiles.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

So may I please clarify my comments, explain them again?

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yes.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

I hope nobody heard me say anything about healthcare and research being incommensurable that would be a gross misinterpretation of what I was trying to say. In fact I said that research concepts are largely overlapping with healthcare concepts and that where they are, the research concepts ought to reference and defer to the healthcare concepts. That is what I said.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Okay.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

And...

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

And I think beyond that we are very much in agreement. I think there are, and you picked a great example, the...an adverse event, an allergy could be considered a suspected adverse event to a researcher...

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Yes.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

...and the data structure of it could be adequate and certainly the data are very useful, but it needs additional interpretation to be formally accepted as an adverse event in a research context. Would you agree with that?

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Oh absolutely, so it sounds like, with that clarification, it sounds like we agree 100%.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

I think we agree very closely, I just wanted to make sure that everybody heard...

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Yes.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

...I was not saying anything even remotely close to research and healthcare being incommensurable, in fact, I think it could well be 80/20 or 80% of research concepts are absolutely the same and can reference healthcare concepts straightaway. That is just a guess at a number, but just to say that it is not a trivial or a small overlap, the Venn Diagrams are largely overlapping. But that still remains that there are research concepts that are not the same as healthcare and should not be, I don't think, should not be blithely assumed that healthcare can embrace them.

I think the researchers have their own way of thinking and that thinking needs to be respected and...but I believe that the basic framework of APIs in research and healthcare concepts can be made to work. My comment was more about, let's just not...let's not assume this is all going to be tidily wrapped up in one bow, but allow some wiggle room, I used the term slippery, to make sure that we are not overreaching on this.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Yeah, I would agree 80% and then there is a lot of complexity in the remaining 20%.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

There is, but it is solvable and I believe that we might...we will need to resort to perhaps a little bit more sophisticated semantic approaches to resolve that 20%. So thanks for listening to my clarification.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

So this is David that is excellent conversation. I...my sense is that there is a tremendous amount of overlap in what you are both saying, and we will try to capture that in the next round. Given that our clock is moving onward and we wanted to also talk about this notion of what is the architecture, in addition to what is a public API, Micky are you okay if we go to the next slide and talk about the key architecture principles?

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yes, please.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

So, let's go to the slide, yes, it is slide 11. So, Arien, your comment about modularity reminded me that we actually put that notion in the architecture slide. So, what I tried to do here was to capture some of the core architectural principles or architecture patterns that we seemed to have focused on as being the ones in the JASON Report that resonated with this task force. So, let me walk through them here and explain them. I think they are self-evident.

But we have talked a little bit about the notion of centralized coordination or orchestration rather than top-down control. I am not going to revisit that, I don't think. Of the architectural patterns that jumped out in our discussions, first that it is a loosely coupled, RESTful API, which we have discussed on previous slide, would be known as the public API connecting heterogeneous systems that there is tightness specified on the wire profiles for data elements fitted to define the use cases. That is the profile thought pushed a little further.

The API will support discrete data plus documents and whatever adequate metadata means. We obviously have some debate around the edges of what is adequate metadata. It would be implemented...the architecture would be implemented with best practice encryption and key management. We are basically passing that recommendation on; we are not really augmenting it. And of course it would respect the notion of send conservatively, receive liberally. That is a little bit, Wes, to address your asynchronous upgrade, I think maybe we could make that a little bit more specific about if the API moves from Version 1 to Version 2, you need to be able to deal with the fact that you may still get Version 1 messages in a Version 2 setting. Or you may have a Version 2 setting that needs to be conservative and support Version 1 only end points.

Then next point is the one we just got off of, expose the API for patient care, consumer access and I lumped population and research together. That is probably not maybe accurate in the long run. And I said data profiles and authorization strategies may vary by class of usage. That is a poor way to capture what...a little bit of what Landen and Arien were just discussing, that there may be differences in the way these are profiled and used for these different use cases. And the access to the API authorization and privilege to use it is a function of whether it is being used in which of these worlds. So, patient care, provider-provider may not be the same as consumer access, which may not be the same as a population service that needs access to a broad sweep of patients, and certainly not as research.

And then Arien, the next bullet point hopefully captures your point that the API should be exposed at least in support of Apps or modules or other mechanisms that encourage what I just lumped as pluggable innovations. That could be both GUI or back end.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

This is Arien. Sorry, this is Arien, I was saying something slightly different which is that if you have a modular EHR and we have modular certification, the APIs that will be exposed by an ePrescribing module may be different from those exposed by an order entry module.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Okay.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

So we can't assume that there is such a thing as an EHR that exposes all of the core APIs, there may be, in a modular world, there may be certifiable modules that expose subsets of the APIs.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, so let me defer the question of what...if we decide to make a recommendation that the public API be a certification test, what that means.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Yup.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

So let me come...

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Okay.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

...let me put that on the back burner and come back to it. Just continuing here on the architectural principles, the JASONS were fairly clear that you could start simple, but you needed to anticipate emerging higher functions. And Arien introduced me to the "Internet Hourglass" pattern, if you haven't seen that, Google for Internet Hourglass it is an old notion. But it has the core of the Internet, the IP stack in the middle and then it expands out to incorporate a growing number of higher order functions that are carefully layered on top of the core functions.

And then I just listed some of the what I call the network or the cross-organization services that the JASONS include in their diagram, but don't talk very much about. Just to acknowledge that the architecture has to account for the emergence of these functions around things such as identity management, authentication and authorization, key management tracking and validating consent and privacy preferences, any kind of cross-organizational directory or cross-organizational data indexing, search services as per the PCAST 2010 report. And then backend complex orchestration and transaction services like service-oriented architectures that go beyond the simple RESTful API as proposed in our poor notion of what the core API would be.

So let me stop jabbering and see what reactions you have to this sort of notion that we could capture key architectural principles on a single slide. What are we missing? What shouldn't be there?

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Hi, its Larry, I will jump in with a relatively small point, but...

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Is this Larry?

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Yeah, sorry, Larry Wolf, yeah. So buried in identity management you talk about providers and patients...

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Um hmm.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

...and I think we need to worry about other endpoints as well, certainly the research world, the public health world, anything that might be an endpoint or something we are talking about. So, I am wondering...I know that list was not meant to be the exclusive list but maybe...

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

No, that is a good point.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

...somewhere in here, in the principles, we should identify just like there is your sort of modes of use, that maybe there needs to be appropriate consumers and producers of information.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, good point. I think the...I don't have the word trust up there. Trust is one of these things that it means different things to different people, but fundamentally you are talking about trust of...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

So both trust and also though extending the notion of providers and patients, the other identities we are going to need to worry about.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah, no, I got that, absolutely. I just think that that is part of the broader rubric...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

...trust...

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

The trust piece is probably important for principles.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yup.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

The other piece that I think fits in here that I want to comment on is I want to pick up on the earlier discussion about there is like...there is a huge amount of alignment across the different uses, but they are not exactly the same. So your third major bullet talks about exposing API for patient care, consumer access and then some of the etcetera's, population, public health, research, whatever we think the rest of the list should be.

I think the first bullet under that should be that wherever possible and reasonable, I don't know what the right words are but things should be exactly the same. To encourage reuse, but where they are not the same, we shouldn't pretend they are. So your second point, they may vary by class. But I think we need to emphasize that there is a huge commonality where things can be reused without modification, without creating problems and we should fly that flag as high as we can and get people in the world of collaborating rather than working in silos.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

I don't know who that was just talking, but this is Landen saying, I really like the sound of that where things are the same, they should be treated as the same but when they are not, those...the sometimes subtle differences need to be respected. And that the commonality should win out.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

Landen, this is Larry, I apologize if...

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

No, okay.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

...my sound got garbled.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

I always agree with Larry.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

So Larry and Landen.

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

And if you don't like me, you can always agree with the other Larry.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

Uh oh, the evil Larry.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Larry's evil twin. I...this is David, I captured that and I will add that in on the next iteration, I think it is a great point. This is, since we have sort of a deafening silence here; let me just prompt with a few specific questions. Is anyone uncomfortable with actually stating that it is a RESTful API? Maybe Josh has dropped off; I know he would vote yes, but Arien, are you comfortable with that?

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Clearly I'm comfortable with it, maybe...no, let's just go with it and see if...see what happens.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Okay.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

I'm...I would...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

So this is Larry, let me jump in with a counterpoint. So RESTful APIs are the hot thing today, in three years, it might be something else.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

That's what I was going to say. Once again, I will be Larry's echo. Landen again, I...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

I'll be Landen's echo.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

...think we should be...I think we need to be careful about naming specific standards because standards evolve. A few years ago we would have said SOAP without any hesitation, now we say REST without any hesitation, but the point is if we can speak in more generic, purpose-driven terms, then the document has longer legs.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

I was going to...this is Micky. I mean, it seems like it makes sense to perhaps note that REST is what we are focused on today, but leave it open. I guess I would hate to take that away though because part of what we are trying to accomplish here is what is the immediate roadmap so we can provide some direction now.

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

Yeah, this is Josh. I think we are not writing the constitution here, which is like a document of all true principles that we think can be built on forever. My understanding of what we are trying to do is come up with a set of recommendations that can be implemented like starting now and that will be directly useful. So specificity can be really helpful, even if we don't think it will be universal and forever.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

Yeah. Landen again, I don't disagree with the intent of the document but then I think what we are developing is not an architecture so much as an implementation. There are ways that you can express the general purpose in architectural terms and then strongly recommend a particular implementation on top of that. But I think if you start naming specific standards, you are really talking about an implementation and not an architecture.

**Arien Malec – Vice President Strategy & Product Marketing – RelayHealth Corporation**

Yeah, maybe loosely...

**Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital**

So on the subject...

**Wes Rishel – Independent Consultant**

This is Wes; I think part of the issue here is the widely varying understanding of what RESTful means. It is, of all things, it is certainly not a standard. I have heard it described as an architectural approach. That being said, I don't know that I would have any objection to structuring the recommendation in a way that includes general principles and specific go forward recommendations. And somehow, although I think it would be worthy of debating, where RESTful fit among those two categories, I doubt that there can be a productive debate on that point, just because of the adapt a previously used term, slippery nature of what people mean by RESTful.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

Right.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

So this is Micky, it sounds like there isn't any disagreement on whether a RESTful approach is the best implementation approach now, so perhaps we can just, as Wes and Landen have suggested, in the recommendation we will just note that architecture is really separate from the conversation of the exact implementation approach you would use now. And then define those two terms and then come in with the recommendation focused on the implementation approach based on RESTful...REST, FHIR, OAuth and what...agree on.

**Wes Rishel – Independent Consultant**

REST principles I think is the best terminology to use, but I am not...

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Right.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Yeah and in some sense, the best working definition of loosely coupled is, in fact, one that follows RESTful principles...

**Larry Wolf – Health IT Strategist – Kindred Healthcare**

But...

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

...at least based on the learnings of the last decade and a half of the Internet. So, we are right up against our time and we have to have public comment. Let me give you all an assignment, one is, if we go to the next slide, slide 12, we have taken a couple of cuts at augmenting the architecture diagram that the JASONS put together with our own annotations. So one of our...in our upcoming meetings, we want to discuss the question of whether we think it is useful to do that as part of our report and if we do think it is useful, what annotations should be there. And what's on the screen is a proposed set, and certainly just something to get the conversation started.

And then if we can go to the following slide, number 13, the...Micky and I pulled together what we thought were sort of the policy or governance questions. And we would need to obviously spend some time on these, trying to decide are we asking the right questions and then if we have specific recommended answers, what are those answers? And which ones do we just actually say are not our duty to answer? So your homework is to be sure that at the next session or the following one, you are prepared to discuss those. And Micky, if no other objection, should we open for public comment?

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Yeah, I guess just one other addition to the homework assignment is, I think one question that David and I were going back and forth on with respect to the diagram is, to the extent that we want to use it, how do we want to use it? On the one hand, it is probably useful as a way of looking at the way the JASON Report sort of framed up the...sort of the mental model they had in mind. It is not necessarily the best way for us to present our thoughts on what we think sort of loosely coupled architecture based on public APIs, RESTful approach, whatever it is, and that is not necessarily the best way to present that. So, I feel a little bit torn about how we would actually use that diagram in a way that would be helpful to the conversation, so would love your thoughts on that as well.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Public comment, Michelle.

**Public Comment**

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

Operator, can you please open the lines?

**Lonnie Moore – Meetings 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. Thank you.

**Operator**

We have a public comment from Mitchell Mouldwin; please proceed with your comment.

**Richard Mouldwin, MD, PhD – Lead Physician Informaticist - College American Pathologists**

Yeah hi, I have been listening to most of the meetings and I have been working on the ONC SDC committee and the IHE SDC Profile group. And I would like to hear, I think, some consideration of the work that the SDC group has been doing in terms of standardizing information for presentation in forms that are presented in EHR data entry forms. I see now that most of the recommendations are based on transmission of data and not standardization at the time of data entry and FHIR certainly falls into that category for the most part. We are working on a FHIR questionnaire profile that pretty much reiterates the SDC capabilities and the current SDC IHE Profile and I guess what I would like it if the group would review that and consider it more deeply as part of the recommendations that are being developed.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Thank you. Any more comment?

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

Thank you.

**Landen Bain – Healthcare Liaison – Clinical Data Interchange Standards Consortium**

Yeah, Landen Bain, I was also on the SDC workgroup with Richard and I don't know perhaps there is some way I can be of service in that. I agree with the comment, I think that SDC takes us closer to some process focus as opposed to just a pure data focus. And I agree with that general approach and if there is some way, David, that you can use me to be a voice for that, I would be glad to.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Okay. Do we have any other public comments?

**Operator**

There are no further public comments at this time.

**David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation**

Okay, so keep that thought in mind, Landen and I think that is the end of today's discussion. Thanks everyone for good comments, good discussion, do your homework. We will see you on Friday.

**Micky Tripathi, PhD – President and Chief Executive Officer – Massachusetts eHealth Collaborative**

Thank you everyone.

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

Thank you.