

**NwHIN Power Team
May 31, 2012, 2 p.m. ET
Transcript**

Presentation

Mackenzie Robertson – Office of the National Coordinator

Good afternoon, everyone. This is Mackenzie Robertson in the Office of the National Coordinator. This is a meeting of the HIT Standards Committee Nationwide Health Information Network Power Team. This is a public call. There will be time for public comments on the agenda at the end. The call is also being transcribed. So please be sure you identify yourself before speaking.

I'll quickly go through roll call and ask any staff members to also identify themselves. Dixie Baker?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I'm here.

Mackenzie Robertson – Office of the National Coordinator

Thanks, Dixie. Tim Cromwell? Floyd Eisenberg? Ollie Gray? David Groves? Arien Malec? I know Arien won't be available today. David McCallie.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Present.

Mackenzie Robertson – Office of the National Coordinator

Thanks, David. Nancy Orvis? Mark Overhage? Wes Rishel? Cris Ross?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

I'm here.

Mackenzie Robertson – Office of the National Coordinator

And are there any staff members on the line?

Matthew Rahn – Office of the National Coordinator

This is Matthew Rahn with ONC.

Mackenzie Robertson – Office of the National Coordinator

Thanks, Matt.

Ellen Lengermann – Office of the National Coordinator

This is Ellen Lengermann from the Office of the National Coordinator.

Mackenzie Robertson – Office of the National Coordinator

Thanks, Ellen. Dixie, I'll turn it over to you.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay. Thank you for dialing in. I suspect a lot of the people on our Power Team who aren't here today just aren't interested in the RFI. As we know, we've been assigned 22 questions to respond to and we have—as we were just discussing before you guys got on the line, the public comment period, I believe, is over on the 14th. However they've given us until the next Standards Committee meeting to get our comments addressed. So we do have a little bit longer even than what the Privacy and Security Tiger Team has, that David and I are on. So that's what we're going to devote today's call to.

Arien said he wouldn't be able to dial in and he sent me a number of comments. All of his comments relate to the last question in the document that we distributed to you. So without—oops, let me put that out of the way—without further ado, let's begin.

The beginning of the Word document that we've distributed for this meeting, if you could bring that up, Matt, has the comments that we've already addressed. So the comments that we're going to start with today begin on page seven. So if you could just—very good, very good.

I have, since our last meeting—the last meeting I had all the comments just addressed and categorized as either priority comments or secondary comments. We were jumping around the topics a lot and so I've put them into three bins now. And the first bin, which are those questions on page seven, all have to do with technology, and the second set of questions all have to do with processes for categorizing and adopting new standards and new CTEs. And then the third category all just relates to the general overall governance processes and the governance models as being proposed.

So we're going to start today. We have three of these questions relating to technology. One of them, question 51, they ask us to prioritize and the other two they ask a secondary, but I think we'll just go through them as they are, because they're all technology type questions.

49 is, "Should we adopt a CTE that requires NVEs to employ matching algorithms that meet a specific accuracy level or a CTE that limits false positives to certain minimum ratios? What should the required levels be?"

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Dixie, this is Cris. My initial reaction to that was to think about what it is that an NVE might do. And it occurs to me that it may be appropriate for some NVEs for some purposes to do matching algorithms and in some instances it seems to not make sense for an NVE to do it at all, but instead to be more purely a transport mechanism.

To have a matching algorithm implies that the NVE maintains some sort of either provider or patient master index that it could use for identification of some kind. I don't think this question is explicit, but I think it means matching algorithm with respect to patient and not to provider. But I think this presumes somehow that the NVE is in the business of managing record locators or master patient index indices, and I'm not sure that that's going to be the case. That certainly isn't anticipated, for example, in core direct specification and directed exchange where the matching is on the basis of addressing a specific provider, as opposed to trying to find the patient.

So I think before we answer the question we ought to say under what conditions would an NVE even be in the business of verifying and matching the subject of messages, as opposed to simply passing them to a designated location.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

One of the things that Farzad clarified at our Standards Committee meeting that really wasn't clear was that not every NVE would be validated against every CTE. So I think what you're saying is—are you saying that the CTE itself should be clearer, should state more clearly under what conditions they need to provide this or that the regulation around it or the detesting procedures or what?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Thanks for that clarification. You're right. It could be the case that the CTE would not apply to certain NVEs for certain purposes, in which case my comment is moot. Then I think we would make the distinguishing—we would try to distinguish, okay for those NVEs who do want to offer some form of matching algorithm what should be required? Or do we need to have matching algorithm required at all or do we let the market work that out?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Or are there other conditions? I think you're point about under what conditions is a—Farzad said that the validating bodies would kind of work out which CTEs would apply and which wouldn't, but you want that to be pretty consistent under what conditions that this would apply right?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Well presumably if you wanted to have two NVEs that could exchange with each other and they were expected to match patients across each other, they'd have to have some consistent way of doing that. I think that the question—I would just like to sort of decompose this question in the pieces to take into account the explicit thing you just said from Farzad, which is we wouldn't require a CTE for all NVEs, that this could be one attribute of an NVE, but for those who did it this is the recommended approach for matching algorithms. Does that make sense?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes. Matt, why don't we capture this? That this CTE would not apply to all NVEs and we need to make clear under what conditions this should apply. Is that right?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

How about stating it in—this is David—stating it in the positive of, "This CTE should only apply to those NVEs that find it necessary to match a specific individual to IHII data."

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Yes, yes.

David Groves – HealthBridge – Executive Director, Tri-State Regional Extension Center

Hey, Dixie. Can you hear me?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, hi David.

David Groves – HealthBridge – Executive Director, Tri-State Regional Extension Center

I'm sorry; I've been trying to speak and got dropped eventually, but I dialed back in.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Can you restate that comment?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I'll try. I never can remember what I said. Just that the CTE should only apply to those NVEs that need to match a specific individual to IHII data.

David Groves – HealthBridge – Executive Director, Tri-State Regional Extension Center

And I just wanted to comment, Dixie, to kind of confirm Cris' speculation that this may not apply to everybody. This certainly doesn't apply to Healthbridge today. We probably exchange over 3 million clinical records a month and none of them are on the basis of a query and response.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Are any of them based on a look up starting with demographic data? Because that's—or are you talking about—?

David Groves – HealthBridge – Executive Director, Tri-State Regional Extension Center

We would match the provider, but we have no requirement to do a look up on the patient and add any value to the patient information by doing so. We do maintain an index of patients in the community, but it's not used for exchange purposes at this point.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Just to highlight Farzad's point. So Healthbridge does zero matches. You need a health information exchange to deliver something like 8 million messages a month that aren't matched, but also handles around 30 million a month of queries that are matched. So I think the point that David was making that we need to allow both is clearly—yes, you can do a lot with either way.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. It's pretty clear the intent here is to focus on the question of accuracy of match starting with ... data to retrieve some data. So I don't think we have to worry that if the use case doesn't require a match, if it's just a direct pass through, then this is moot.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

So let me push just a little bit of—this is Marc O. —on that question because this troubles me and maybe others have come to peace with this better than I have. But all we're doing when we say that is we are deferring who and where the match is going to happen, but match will happen, to be useful. And usually what we are doing is we are then saying somewhere in the bowels of some EHR and/or some front office person and/or some clinician a match will be made.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Right. We're just saying that as a condition of certification to be an NVE, if you're not actually doing that match that shouldn't be a condition of certification.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

I absolutely agree, but I guess where I was hesitant with that was while our discussion here is about NVEs, at the end of the day when we say it's not a requirement for them to match what we are saying is we are deferring that match to other systems, which we have no knowledge of how well they're going to perform.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Right. And I think we're going to get—in part B of this question we're going to come back to okay, what about those NVEs that actually do have to match? So we're not getting off the hook here. We're just—

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Well even the ones that don't have to match, we are just kicking the ball down the field.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Mark, this is Cris. I totally get what you're saying. When I looked at these questions, frankly, where I came back to was, "Well let's go look at the patient matching recommendations that Overhage's group made." That David and I were at least ... and to say that looks like a reasonable standard for what we ought to do.

I was going to ask the question affirmatively about do we think that NVE is always the best place to do patient matching or would it actually make sense in some instances to say that yes patient matching needs to happen. No it may not necessarily or even often be something that an NVE should do. Maybe it's better that that ought to be done by certified EHR technology vendors, for example. Let's just be explicit about it.

M

Where the exchange is a clinical result. Even if the NVE did a match, it wouldn't necessarily mitigate the requirement of the EHR to do—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

—to do the same thing.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Just to take slight issue with Mark's point, it's completely true but I think irrelevant to the question we're being asked. And, oh by the way, I think we're going to come back to it because in part B it is relevant. Let's just go head on to part B and talk about—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Do you mean question 50 or 51?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Should there be a minimum set of false positives and false negatives and should an ... be specified then and so forth? So in other words we're going to have to answer the hard question, which is assuming that we are in fact—the NVE being certified does in fact do patient matching, what do we have to say about that?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

The question, the first question is should they adopt a CTE that requires the NVE to employ matching algorithms. So given that we stated that this CTE should only apply to those NVEs that need the match, given that we've limited to scope of it to those that actually need to do that, should we adopt the CTE that requires that they use an algorithm that meets a specific accuracy level?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Right. And so then that decomposes to the question of any algorithm or a specific algorithm that's shared by everyone?

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Well I think the fallacy in the question is smart though. It has little to do with the algorithm. It has everything to do with the data.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Data, amen. That's why I was—this is Cris—that's why I was going to make the point that any algorithm is sufficient as long as its key includes the right data elements, exactly.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I think the real question here is should there be a certified or a tested level of accuracy, which takes into account all of the parameters like data, population, etc. My personal answer is no. We're not good enough to do that, but I'm open for debate on that one.

M

I don't think it's doable.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

And it's certainly not doable to say that every NVE must use algorithm A. And frankly I think it would be stupid, from a regulatory standpoint, to limit the industry to algorithm A. If a certain NVE says that, "I've implemented algorithm B or algorithm X and I can do an even better job," great.

M

Well it kind of prohibits any kind of innovation in that.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Imagine that.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Keep in mind the CTEs are all supposed to be at the policy level. Even though when they get down to the certification—this is what we talked about at the committee meeting—even though at the certification testing level they may have more specific requirements, the CTEs themselves should be at policy level.

So do you think that there—so are you saying that there should not be—well, should there be a specific accuracy level specified at the policy level? I heard Dave say no.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. I would turn this around and say we don't have reproducible test methodologies nor testable data domains to determine what that accuracy level should be. So what we would encourage, as in our comment, is that the Office of the National Coordinator should seek to develop reproducible testing methodologies that could allow an NVE to ascertain its accuracy. And under our transparency principles elsewhere maybe we could even suggest that that accuracy be transparent to people who are using the NVE. But that that's the approach to take rather than to say we already know that 98% is good enough and therefore as long as you can come up with some number that looks like 98% you're okay. Because I just don't think that's feasible or practical or whatever.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I think that that's consistent with what Marc's workgroup concluded too right?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes, I think so. Marc, I think—

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

I agree with that. Let me just test it a little bit though, if this is going to help the NVE in the sense that—so we're going to say we should go off and do this. It kind of gets back to this is a barrier. I think where the Office of the National Coordinator is coming from is this is a barrier that they keep hearing and they're looking for help with the barrier.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

That's absolutely true. I heard—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

That is the barrier, Marc. The ability to, with some certainty, match patients.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

But I think it's the confidence, if you will, and it has to do with liability. It has to do with a whole variety of things. They keep hearing that people aren't willing to participate in exchange because they're not sure if the patients are going to get matched right and then that leads to the whole cascade of how do you get this going?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

You've pointed out that less than half the problem is associated with algorithms and probably more than half associated with the quality of the data about the person in the first place.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Well one of the things ... is letting the market drive improvements. So if we recommended that the minimum not be specified but that they publish their accuracy level, that would enable the market to drive improvements right?

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

If you had a way to test them, as David suggested.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So I was at a meeting a couple of weeks ago in D.C. from the Bipartisan Policy Collation. It was about patient matching and Farzad and Joy were there and Tony Trenkle and a bunch of the Office of the National Coordinator people, Judy Murphy.

They heard several large IDNs, very large IDNs, tens of millions of patients of covered lives, basically pleading with for help with the problem of false positives and false negatives. Citing FTE equivalence necessary to correct the mistakes, citing some near miss healthcare disasters, false positives and pleading with the Office of the National Coordinator for a national patient identifier. And Farzad, I thought, did a really excellent job of basically saying, number one, that's not going to happen. Number two; it wouldn't really change your situation. You still have a matching problem. You have to match that identifier to the human being in front of you. Then he turned to the group and said, "You guys go figure out how to make do with that you've got."

A group from the CCC, the Continuity of Care Coalition, from Geisenger, a representative from Geisenger talked about experiments they're doing with their NPI service. They're looking at using cell phone numbers, driver's license numbers, credit card numbers, a variety of other supplemental identifiers to address the false positive/false negative problem. And Farzad said that's excellent work. We should pursue that.

And then Shaun Grannis got up and talked about the fact that what we have is a bunch of black box algorithms that are protected by proprietary secrets. There's nothing wrong with that, expect that we have no way to ascertain whether they work well or not. So we need testing data.

And he suggested that one other thing that might go forward is the development of standardized test sets. So that people could actually measure their algorithm. And you could do that with appropriate de-identification switching and matching. So that you don't have actual patient data in there already, you actually have actual patient names and addresses and the like mixed in there.

So anyway, just out of context, Farzad blessed, I think—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

The only thing that bothers me a little bit about the test sets—I think you can kind of use those to validate whether an algorithm produces a certain expected result, but at the end of the day, as soon as you move to the real data and all of the kind of messed up data collection that has occurred over time with people, you're going to have different results. You're not going to—I mean the misidentification is going to result as a result of somebody having miscoded information about a person.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

The good news is we're not really being asked to comment on that in this FRI. I'm just kind of giving some backdrop here. So my point is that there are good algorithms and there are bad algorithms, and there is no way today to validate them other than whatever internal testing, secret testing procedures those algorithm developers use. And the suggestion was floated, that seemed to get some credence in the room was that that should be less opaque without actually exposing the algorithm details itself.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Well you could, in terms of the transparency, require that they publish their accuracy rate and the method they use to measure the accuracy rate without requiring them to publish their algorithm right?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Exactly. And the question was would the generation of synthetic data that reflected real world patient ... be useful in doing that? And we didn't answer that question in the meeting. It's just the notion that at least several people, including Shaun Grannis, seem to think it's a good idea.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

So I think our answer to this one is no, they shouldn't be required to meet a specific accuracy level, but they should be—you can write this at the end of that, Matt.

Matthew Rahn — Office of the National Coordinator

I'll change it after.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay. They should not be required to meet a specific accuracy level. So are we prepared to recommend that they be required to publish their accuracy and how it's measured?

M

I think that if you put in the spirit of overall belief that transparency is useful, then that makes sense.

Matthew Rahn — Office of the National Coordinator

Yes.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

We have said that as a general principle.

M

Right. A lot of these things will fall under that, a little sunlight does a lot of good kind of approach.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, and it would drive the market, I think. Okay.

So the third question, "What should the required levels be?" becomes moot. Okay. All right, are we ready to go on to 50?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

One more comment, Dixie. Maybe it's not worth adding this, but I think in Marc's power team from last summer we consistently kept coming back to the fact that since the re-specificity requirements might vary depending upon the purposes of the match, we might want to offer that as one of the reasons why it's hard to set minimums because it really is use case specific.

Matthew Rahn — Office of the National Coordinator

I think that's an excellent point.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, put that as your second sentence, Matt. Right after this, “This CTE should only apply,” and put, “Further that the accuracy level required is situation dependent.”

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I like the term sensitivity and specificity in that, that Cris articulated.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

What are you suggesting? In that second sentence?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Excuse me, I’m not looking at the—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

So the accuracy level and specificity required is situation dependent.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Sensitivity and specificity.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Sensitivity, yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So for example, if there was an urgent drug recall, you might want to air in the direction of being overly sensitive and send out a few false positive alerts because of the urgency of the drug recall. Whereas if you’re matching patients for treatment, administration of x-ray therapy or something, you’re going to air in the direction of being incredibly specific. So it just depends a little bit on the clinical circumstance, and that may not be relevant to most NVE use cases, but I can imagine clinical decision support NVE services emerging in the future, for example, where that’s very relevant.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay, do we like what we have here?

Matthew Rahn — Office of the National Coordinator

Dixie, a quick question. For the first sentence, should I specify that it’s the first question that they’re asking, since there could potentially be two CTEs that you guys recommend? Does that make sense? Because the first one is should we adopt a CTE that requires NVEs to employ matching algorithms? So the first sentence is answering that question right?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I think our answer answers the whole question.

Matthew Rahn — Office of the National Coordinator

Okay that’s fine. I just wanted to make sure.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I wouldn’t break it out. I think it’s fine.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

This is Cris. I think one thing we did say was that if there is a CTE it should not be for a specific algorithm. I mean we say in here that it shouldn't be required, I mean a specific accuracy level, and we say that they should publish it, but we didn't say explicitly in here anything about that we don't believe that a particular algorithm is appropriate or that it should be based on any algorithm that can generate a suitable outcome. I'd hate to lose that element of it. So maybe somewhere between the second and the third sentence that the CTE should not require a particular algorithm—

Matthew Rahn — Office of the National Coordinator

And then nor should it require ... accuracy level.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Yes.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I think what we're really saying is there shouldn't be—well the CTE itself is an NVE—look up at I-3 at the top. “An NVE must have the ability to verify and match the subject of a message, including the ability to locate a potential source”—Okay so we're saying that it would only apply to certain NVEs. So then we say it should not require a particular algorithm—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Nor, not or, but nor should it require an accuracy level.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

You shouldn't have said that, Cris.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

I know. I just completely screwed everything up.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

There we go. Okay, and then put that second

Matthew Rahn — Office of the National Coordinator

How about—I'm just wordsmithing here. Instead of saying, “Nor should it require an accuracy level,” something like, “And we believe it is not possible to specify a default accuracy level,” or, “A minimum accuracy level.” In other words—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

“Nor is it possible to specify”—

Matthew Rahn — Office of the National Coordinator

Right, right. “Nor is it possible to specify a minimum.” In other words, it's the lack of state of the art rather than that we don't think there should be a minimum.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, that's good. Specify a minimum accuracy level, okay. Are we ready to go on to the next one?

The next one, I think, Marc's workgroup already did this right? “What core data elements should be included for patient matching queries?”

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

I'm not sure we did this to make anybody happy.

Matthew Rahn — Office of the National Coordinator

I would say we did it, but we did it the absolute minimum. And most people believe you're going to have to go further. So I think implicitly this question is what additional data elements beyond the CDA R2 header elements would be useful? And I think the jury's out on that. We don't know.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

I think we can just hearken back to our previous answer and say because it's still an evolving field that we think just describing it is all you can ask.

Matthew Rahn — Office of the National Coordinator

Right. And it's going to change over the next five years for sure, but we don't know where or how.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Marc, in your work, did you guys identify any absolute minimum number of data elements that you would need to have to have any reliability at all?

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Well—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Let's not try to match people if you don't have a full name, a date of birth and a gender.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

And even that's not—name, date of birth, gender and zip are not enough. You need something else.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes, but the problem that we ran into, issues like you may have a transgender, homeless person, has neither gender nor street address and yet they've got a driver's license and an absolute, ironclad identity because you've got a picture of them and you know exactly who they are. So it gets just so tricky.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

So how do we answer this?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

We should answer it that the data elements required should match those required by the algorithm in use.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

... here's given the following data characteristics and given the following testing, we can get this performance.

M

And obviously if you give us less data you're going to get less good matching.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David again. One thing that might happen in the future is the development of some kind of an SNi framework approach towards common best practice profiles in this space so that we could increase the likelihood that what works in one community's NPI would work in another community. There are some of us who believe that these NPIs will aggregate over time and will have some small number of a dozen or so that subdivide most of the population in the country.

And you'd like it for those dozen to be interoperable in the sense that they all are capable of reacting to the same data element profile, knowing that you won't guarantee it, but you'd like to at least have a shooting chance at that. So I would approach that as a profiling problem, which is something that could be updated over time as standards and best practices evolve rather than as a standard to be written into regulation. So I think that's consistent with what we're saying.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

So how—so how are we answering this? That none should be—they should evolve over time? The SNI framework should develop this? ... algorithm?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

What if we said something like the starting point could be the recommendations of last summer's NwHIN Patient Matching Power Team; however, additional profiling work should be supported to reach broader community consensus or something like that?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Sounds good to me. You should get in the role of writing regulations, David.

M

David's too nice a guy to—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I know, true. Recommendations ... our team is the baseline plus continuing work on refining this list or something.

M

And my evil side would come out if you gave me that kind of power.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Dixie, I have to step away from the phone for a minute or two, but keep going. I'll be back.

Matthew Rahn — Office of the National Coordinator

Does that look all right?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, that's good. How about everybody else, fine?

Matthew Rahn — Office of the National Coordinator

Yes.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay, now this is the one in which they ask us to prioritize what standards should we consider for patient matching queries.

M

Dixie, on that last one, you might want to identify which power team, workgroup—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

The NwHIN Patient Matching Power Team, good catch. Isn't that what's it's called, Marc, Patient Matching Power Team?

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Yes.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay did you guys find any—I mean there's CDA header for this question 51. Marc, did you guys identify any standards besides this? I know the Metadata Power Team and also ... adopted all the CDA header as the metadata that should be in the universal exchange language.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Doesn't it depend on the protocol that we're talking about? So see CDA header makes total sense in a direct or rest environment. In an NwHIN exchange environment, doesn't this step into ... ?

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Well which they didn't really directly adopt right?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

What's the question? This is David, I stepped out. Which one are we on?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

51: standards we should consider for patient matching.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

But the NPRM includes the two flavors of directed exchange, NwHIN and a restful protocol. So I guess my question would be does the standard match the protocol? I think it does.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

I agree. I think that's the answer.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So what do you think the answer is?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

It's protocol dependent.

David McCallie – Cerner Corporation – Vice President of Medical Info

Protocol dependent, yes, I would agree.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Yes. So protocol dependent in general. I mean just amongst us chickens I assume that—my recollection was that it was CCD header was what was looked at for as appropriate in directed exchange, and presumably correct. Then for NwHIN exchange I think we would have to devolve to the IET standards around XDR and

David McCallie – Cerner Corporation – Vice President of Medical Info

Yes, XCPD would be the one for NwHIN exchange.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

That's right. That's right. That's right; I'm sorry. I always put that ... in a direct CSP, sorry.

David McCallie – Cerner Corporation – Vice President of Medical Info

I mean it's consistent. It's part of that family that leverages that awfully complicated ebXML.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

It's just X as far as I'm concerned in the ... world.

David McCallie – Cerner Corporation – Vice President of Medical Info

I agree. I think this is something that will emerge by consensus. I don't like the current standards. I don't think any of them are quite good enough, but it's certainly going to be the case that there could be NVEs that serve specific purposes and use different algorithms. Like, for example, Surescripts. I mean you guys might want to be an NVE.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

We are reading this as if potentially e-prescribing might be regulated as an NVE, as well as other things Surescripts might do. So absolutely we look at ...

David McCallie – Cerner Corporation – Vice President of Medical Info

And you don't use XCPD, nor should you.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

No we do not. We use entirely restful based standard.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

This is something; it might come out of the ... effort too.

David McCallie – Cerner Corporation – Vice President of Medical Info

Yes. Yes.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

I think the idea of being protocol bound makes the most sense to me.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes.

David McCallie – Cerner Corporation – Vice President of Medical Info

Yes, it's a function of the protocols that the NVE is certified to support.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, and use those—Matt, the direct and the exchange are like for example. We aren't recommending. We are just saying, "For example." Yes.

Matthew Rahn – Office of the National Coordinator

Is it XCDP? Do I have that right for the exchange?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

No.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

It's XCPD. I can never remember that right. David?

David McCallie – Cerner Corporation – Vice President of Medical Info

Yes, I'm sorry; what was the question?

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

It's XCPD isn't it?

David McCallie – Cerner Corporation – Vice President of Medical Info

Yes, XCPD. It's like ax, cross, patient, demographics or something like that.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

Cross-Community Patient Discovery, I just Googled it.

Matthew Rahn – Office of the National Coordinator

It is XCPD right? Did I get that right?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I thought it was XPD, but—I think it's XPD. I don't think it has a C.

David McCallie – Cerner Corporation – Vice President of Medical Info

I think it does. I know it's four letters.

Marc Overhage – Siemens – Chief Medical Information Officer, Health Services Business Unit

I just Googled it. It's XCPD, Cross-Community Patient Discovery.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay, usually X means Cross-Community without the C, okay. Good. All right. Three down. Let's go to the next one, Matt, which is we're getting into the category of what this NwHIN Power Team is all about. These questions have to do with the process for classifying and selecting standards in CTEs, which as you know is something we've been working on.

What process should we use to update CTEs? Now most of our work has, well all of it has been focused on classifying and evaluating specifications to become standards, but this particular question has to do with the process to update the CTEs themselves and the conditions for Trusted Exchange.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

So if I understand this question, one example might be, let's say this stuff is up and running and some new protocol emerges as being useful for some health care purpose. And the people behind the protocol want it to become a certifiable component in the NVE space. What would they have to do to get it there? Is that kind of a scenario?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes. You know, I think that we should start off by asserting what the main topic we talked about at the committee meeting, that the top-level policy CTEs themselves shouldn't change that often, but that there should be a process that allows the specific standards against which the implementations are certified, those should be allowed to be updated more frequently. There should be a process to allow a more frequent update of those. Like if you suddenly have a restful transport protocol and you want to add that, you shouldn't have to change the top-level governance policy, which is what the CTE is supposed to be. You shouldn't have to change the CTE itself. You should be able to change the transport standard under it.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

And I thought that we got general consensus that that was going to be okay. Didn't you—?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, but I think that we should record it here.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Reiterate it, yes.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes. Because in response to the RFI. We did get general consensus. And once we got past the idea that we weren't arguing whether or not it was considered part of governance, who cares, but we did get consensus that there really are two levels of requirements, that the top level should stick to policy and that the level below it that specifies standards and certification criteria for the technology implementations should be allowed to change.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Yes, so then the question becomes how does a candidate standard or protocol get to the point of where it is now a CTE? And I think—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I don't think it ever should. I mean can you ever imagine that—a standard is something like direct, direct protocol. That's a standard. I don't think that should ever be a CTE. The CTE, the top level CTE should be at a policy level. It's something like NVEs should be able to support the National Standards for transport.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Okay. So I apologize. I was using CTE in both hits, kinds of uppercase and lowercase meaning. So let's say a new restful transport standard or let's say a restful demographic query standard emerges that is a candidate to replace XCPD. How does that become something that an NVE could be certified—I'll use that word—to support?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Well that's actually question number 64 and 65 where we really get to the core of what this power team does. But this particular question has to do with updating the top-level policy. How does the NwHIN Coordination Committee update policy for the NwHIN? I mean if you think about top-level policy for the nationwide health information network—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Dixie, they aren't using CTE here only to refer to top-level policy. They lump it all together.

M

Right, but CTE is going to be bound to specific test cases.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

The way this RFI is worded they just lump them all together. They're all equal, all 18 of them or whatever.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I know, but if you look at them, they're all top level. None of them say direct, for example.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

No, but they have things in there like certificate discovery should be—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Right, but they don't specify a standard for it. That's what we discussed at the committee. That they really should break it out so that the top level is—oh, but you're saying we should answer this as if—yes, you're—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

I'm saying that the way they've asked the question we have to assume CTE means everything from high-level policy goal down to low-level protocol.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay. I think we should start by reasserting that the top-level policy CTEs should not change that often, just what we said in the Standards Committee.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Right. And they should be focused on safety, security, privacy, the big high value trust propositions, the development of a trust framework. And then the details of which protocols are supported inside that trust framework are going to change, hopefully, a lot over the—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes. And then we put that, Matt, "The top level, should focus on policy and should not change that often."

M

And these lower level ones are really more about how we certify an NVE. How we ... validate that they are performing and they are meeting the obligation of that policy.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, right. That's exactly what we concluded at the committee meeting, but I think it's good to articulate it here to remind everybody. People do tend to forget.

Okay. So how do we update a CTE that's a transport CTE, let's say? We have one that says you have to use direct or exchange and we want to add rest?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. I don't have a sense that even with our NwHIN Power Team work that we have an answer to that. I think that Power Team has taken a good shot at attaching qualitative and even in some cases quantitative measures or assessments to a candidate profile, but we haven't done anything that determines how one actually blesses it.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, the only thing that we've done, and this is on our agenda for the future, but the only thing we've done so far is that to say that the Office of the National Coordinator, and we haven't said it anymore about who, the Office of the National Coordinator would determine the need for new specifications. And then that specification would be submitted for evaluation, a recommendation would come back to the Office of the National Coordinator and then they would decide whether to make it a standard or not, but we haven't gotten to any more details.

Ellen, do you have anything? You've been doing work for us in this area.

Ellen Lengermann – Office of the National Coordinator

Right now, no. The process of how it's evaluated, we said the approach was going to be in that grid format and that we would place certain attributes in those boxes, and that's as far as we've gotten.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I think we could go to ... the change should be driven by the market need.

M

Yes. I was just going to back up on your last statement about the Office of the National Coordinator determining the need. I think the market determines the need and the Office of the National Coordinator may be the point at which that need is communicated and acted upon, but we need to know how is the Office of the National Coordinator going to know that or hear the market? What's the process for market input to suggest the changes to the CTEs?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

So there should be a process to allow the market to suggest changes to CTE.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. Personally I agree with that sentiment, that it should be driven by the market, but just to raise the objection or the question that someone from the Office of the National Coordinator might raise, which is, at least under meaningful use, these regulations, such as stage 2, are actually concretely specifying specific certifiable standards and requiring certification of those standards before your product gets the certified EHR brand. Do we think that there is no equivalent to that for NVEs? That's an unnecessary parallel? We don't need to bring that forward?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

You mean like a regulation? It's got to be driven by a regulation?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. A regulatory process that results in certifiable NVEs analogous to certified EHR technology. Again, I'm just asking the question. My personal answer is no. We don't need that, but—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

I would agree, and I'm not sure we would have it in the case of the EHR certification work, not for the incentives that went along with it.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Right, exactly. So if there were to be financial incentives, then it perhaps changes.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Okay.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

But I think we are saying there needs to be a process for the market to communicate a deed. I mean the Office of the National Coordinator might pick it up somehow, but there should be a way, just like there is for all the SDOs. If you want a new standard, there's a way for you to propose a change or a new concept, for example.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Let me be the devil's advocate again. Let's say a bunch of NVEs decide to start using a new profile that, I don't know, Facebook puts out and that profile has not been through any formal security testing by the Office of the National Coordinator or any of the existing standards bodies, and yet these NVEs are carrying the NWHIN brand and they're using this new protocol. Is there something that would protect us from the fact that that protocol could be bad?

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Yes, that's a good point.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I don't mean to integrate Facebook there. That shouldn't have—

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

And does it affect their validation status?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Right. Because remember there's this branding thing in there. These NVEs are trusted because they carry this NWHIN brand, and some of these protocols could break that trust if they're not properly designed. Now again, I think the market can deal with that, but that's the question that I think we're going to get back.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

They have specific data around that one, because when we were doing the—when Power Team was doing the—when we solicited inputs about the exchange specifications, I would say that the majority of people who responded had implemented the exchange protocol to meet a specific contractual requirement, and they weren't even necessarily using it. They had implemented it and they were using something else. That could very easily happen to the NVEs as well.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Right. So I think—this is Cris—I think one of the issues here is our assumption about whether NVEs will be single purpose entities that just do certain things. Then that everything they do will be bound by the CTEs. And that's possible, but it's also possible that an entity—I'm just making it up, but I'm imagining what about some entity that serves, for instance, the payer community in addition to clinical exchange?

In that instance they may do a lot of things that are not controlled by the CTE. I'm trying to pick as passive of an example as I possibly can. But I would assume that other rules would say that if you were going to do function X it needs to be governed by a CTE. But it doesn't say that an NVE must only do things that are bound by a CTE.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I think we should capture that, Matt. That it needs to be clarified. What does NVE validation—how does it really bind the scope of their business? Are they restricted to just doing what's specified in the CTEs or can they do other things? Do they need to use the protocols that they were validated under? Do they need to use those? That kind of gets back to that meaningful use thing too. Do you need to use the EHR certified capability to do your meaningful use? It's the same sort of thing.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Right. So given that fact, if the answer were that an NVE, for certain designated purposes, must operate under CTEs—I'm just looking ahead to question 61 and 62—it feels like the CTEs—I'm not sure why you wouldn't run them through the Health IT Policy and Health IT Standards Committee, generally speaking.

I do remember that we had a point for; I think it was Meaningful Use1 where you had the request that said, could we designate some things? For instance, could be HL7 2.x and allow HL7 to continue to mark the standard? And I think we got the guidance from the Office of the National Coordinator that, for purposes of regulation, we couldn't delegate to an SDO the job of upgrading a standard. That it needed to be specifically called out in the regulation. I may be getting that wrong, but it was pretty ... close to that.

So the issue here is if that regulatory guidance is still true, it feels to me as though we could freeze the industry if we required that NVEs must do everything under a CTE and may do nothing except for what's explicitly called out in a CTE.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Well we need to discuss this one more, but we've run out of time and there's another meeting backed up here. So we need to, I guess, open it for public comment. We probably won't get any, but open it, and then we're going to reconvene at 5:00 Eastern Time today for another hour.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

That's fair. I have to go get on a Health IT Policy Committee Information Exchange Workgroup call.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay.

Mackenzie Robertson – Office of the National Coordinator

I'll be with you on that. Don't worry.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Wait, that's team three. I'm not going to listen into team three. I'm only going to do team two.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay, are there public—

Mackenzie Robertson – Office of the National Coordinator

Operator, can you open up the lines for public comment please?

Public Comment

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

I'm sorry; I should've left two minutes for this.

Operator

If you'd like to make a public comment and you're listening via your computer speakers please dial 1-877-705-2976; if you're listening via your phone, just dial *1 to enter the queue.

We have no comments at this time.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

This was a good discussion. Thank you all for dialing in. I appreciate it.

Operator

You do have a public comment from John Travis.

John Travis – Cerner – Senior Director and Solution Strategist, Regulatory Compliance

Hi. This is John Travis with Cerner. I was debating making a comment. But the comment about freezing the industry caught me attention, because there's something else that's very similar that nags me and we'll put it our response to the RFI as Cerner, and that is are different network NVEs compelled to be on the same version of a CTE?

Now I'm drawing a parallel with meaningful use in a way that all of the entities that are participating in meaningful use as providers need to be on certified versions of software that are certified too, in addition of meaningful use certification criteria. The parallel I draw here is the danger that can happen if you're going to put that kind of requirement on this. I could see it happen that trading partners or looking at each other going, "Are you on this level of CTE?" as we iterate generations of those in the future.

I think the Office of the National Coordinator ought to consider the impact if they go with that kind of policy. That could be a real freeze if you're going to say to the industry, "All the trading partners have to be on a given level." Perhaps it will work better if they are on a minimum level of CTE that can live on for a while and be valid or have upward compatibility or backward compatibility, if you want to look at it that way, with a higher level or newer CTE that doesn't obsolete the transacting that may go on.

So I think we need to be real careful with how we wind up iterating the CTEs and what that says for two entities that are trading but are wanting to operate, as they do, independently to adopt new versions of things that are substantiated by a CTE. I hope that makes sense.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

It does. Thank you very much.

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

This is Cris. Let me just pile on and say I totally agree, and those Cerner guys are pretty smart today.

John Travis – Cerner – Senior Director and Solution Strategist, Regulatory Compliance

Well David and I actually haven't talked about that one yet, but maybe in—

Cris Ross – Surescripts – Executive Vice President & General Manager, Clinical Interoperability

Well you have now.

John Travis – Cerner – Senior Director and Solution Strategist, Regulatory Compliance

There you go, David.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

All right, I believe you. All right, good-bye.

Dixie Baker – Science Applications International Corporation – Chief Technology Officer, Health & Life Sciences

Okay, thank you all. Talk to you later. Bye-bye.