

**NwHIN Power Team
Draft Transcript
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Presentation

Judy Sparrow – Office of the National Coordinator – Executive Director

Good afternoon, everybody, and welcome to the Standards Committee's NwHIN Power Team. This is a Federal Advisory Call so there will be opportunity at the end of the call for the public to make comment. And just a reminder, team members, please identify yourselves when speaking.

The quick roll call: Dixie Baker?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I'm here.

Judy Sparrow – Office of the National Coordinator – Executive Director

Jim Cromwell? John Feikema? Kevin Hutchinson? Wes Rishel?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Here.

Judy Sparrow – Office of the National Coordinator – Executive Director

Cris Ross? Ken Tarkoff?

Ken Tarkoff – RelayHealth – VP & General Manager

Here.

Judy Sparrow – Office of the National Coordinator – Executive Director

Brian Adams?

Brian Adams

Here.

Judy Sparrow – Office of the National Coordinator – Executive Director

Nancy Orvis? David McCallie?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Here.

Judy Sparrow – Office of the National Coordinator – Executive Director

Ollie Gray?

Ollie Gray - DOD

Here.

Judy Sparrow – Office of the National Coordinator – Executive Director

Did I leave anyone off? With that, I'll turn it over to Dixie.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Okay. Thank you all for dialing in today. We are continuing our discussions about the—we will be continuing our discussions about the specifications that comprise NHIN Exchange and NHIN Direct, but the first item on our agenda is a report back from Ken Tarkoff on the work that his subgroup has been doing to look at Exchange mechanisms other than NHIN Exchange and NHIN Direct Project that are widely used in the healthcare industry today. He's done quite a bit of work on this and he's been—he's gotten some assistance from a colleague, Brian Adams, who's also on the call. So with that, Ken, would you like to just lead the discussion of your ... and I do thank you for leading this work.

Ken Tarkoff – RelayHealth – VP & General Manager

Yes, thanks, Dixie. Appreciate that. And by the way, Brian's done more than a little work, so we definitely need to give him credit for it. He's the brains so—

Just in follow up to the last call, what we had—if you recall from the last discussion we had where we talked about a review of NHIN Direct and the common types of transport and security protocols that were done in the industry, and the report that we went through had a framework around the maturity of the protocol as well as the industry adoption, as it related to both the transport and security and so what we talked about on the last call was it might be a good idea outside of just the NwHIN Pilot to talk about what other things were going on around the industry, as a summarization of the types of activities that were going on. And so we attempted, in our group, to try and address the comprehensive set of types of transactions that are out there, around the transport and security framework. We tried to use the same framework that was used in the earlier discussion about the NwHIN Project.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Ken, just a moment. I just sent a message but would whoever is controlling the slides put Ken slides up, please? Thank you. Alright, I'm sorry.

Ken Tarkoff – RelayHealth – VP & General Manager

Alright, great. So the—we broke it up into two main components which was—one was “push,” where actually sender is defining the trigger and has knowledge of who the recipient is as one categorization, where there's a number of different scenarios. And the second scenario is around the “pull,” where you're actually receiving information. And we divided up that way because we thought, with all the different types of transport and security, as you think about workflow that was, to us, the simplest way to think about how to divide it up into two different components.

So on the first part on the first page around the push we identified four scenarios. We tried to summarize it; there's a lot on this slide I know and actually Cris had a suggestion that maybe we should go back again and try to simplify it once we think we have the comprehensive-enough content on there. But we broke it out into four main scenarios. The first one which is a lot of scenarios around health system-type exchange where there's results going to EHRs, orders going from EHRs into reference labs or into lab and discharge summaries. So lots of different transactions, obviously very common around the meaningful use criteria and the types of exchanges that are going on. The most common industry protocol we see for that is HL7. There's a high degree of maturity and a high degree of adoption, as we see in existing health systems and reference lab connections and so forth.

Transport and security are described there. I wasn't going to go in great detail into each of these unless we thought it was necessary. Really I think the subgroup, when we put all this together, there was some modifications to it to make sure it was all-inclusive but meant to define a little bit of the detail around how

it's done, both in the transport and security process, and there are a couple of options for sure; in particular, around security there are a fair amount of options.

So that was the first scenario that we looked at, particularly around the HL7 protocol. The second one, which has a high degree of volume today which is the prescription to pharmacy via Surescripts, which uses the NCPDP protocol. Obviously, there's a high maturity and adoption, industry adoption, of that capability and that uses the HTTP REST web services and SSL security process.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Ken?

Ken Tarkoff – RelayHealth – VP & General Manager

Oh, go ahead. Yes?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

David McCallie. Just a—maybe a small correction, but I think you could probably leave off Surescripts or use Surescripts as an example because there are other vendors that support NCPDP; Surescripts is certainly the dominant one but there are other ones.

Ken Tarkoff – RelayHealth – VP & General Manager

Yes. No, that's a great point. I'm sorry. Yes. We'll definitely do that. Thank you.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Question on that. Do the other vendors use the same transport?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

They use NCPDP, yes.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

No, but—so NCPDP has a format for a prescription and various specifications—it's, I thought that the NCPDP specification for transport though was different than the one used by the company you were just speaking of, Surescripts. And so if the focus of this discussion is on transport and security, I'm not sure that it would be obvious to include all the vendors in the same category.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I don't know—Wes, this is David. I don't know enough to know that. Also, at least in earlier days and maybe still true, the queries necessary to support formulary were X12 based.

Cris Ross – LabHub – CIO

This is Cris. Can you hear me?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes.

Cris Ross – LabHub – CIO

Sorry. I had trouble getting on the phone line. So we can dive into that in more detail. Yes, the eligibility responses are X12. The formulary is HL7. In general, the transport services on the vendor side of the network that connect to physicians are all REST web services.

On the pharmacy side there may be some variation. And Ken may be able to talk a little bit about whether Relay uses a variation on the pharmacy side, because they do a lot there. There are people who

are better positioned than me that could get the full inventory of all the transport varieties. I think it makes sense to include all of them, not just the Surescripts one. But Surescripts is not particularly unique implementation of NCPDP.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I think, Cris, we understand all of that but the question on the table right now is if we use the Surescripts approach to transport and security, and say that all of the various providers of E-Prescription services use that approach, are we being accurate?

Ken Tarkoff – RelayHealth – VP & General Manager

So Wes, can I just jump in? This is Ken – I'll jump in. I think we need to do a little more research on this one.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Okay.

Ken Tarkoff – RelayHealth – VP & General Manager

So what I would suggest is that when we put this together, RelayHealth that we have, we do transactions as Cris described and we can do some other research to other companies. So what I would say on this one is it sounds like we need to do a little bit more digging on this one to make sure that we incorporate as much as we can, based on the knowledge we capture.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Thank you.

Cris Ross – LabHub – CIO

But even in your—agreed. And Ken, we can collaborate on that as necessary. But I think, even in your case, I think Relay is using a set of HTTPS web, REST-based web services—

Ken Tarkoff – RelayHealth – VP & General Manager

Yes, they are. We got that group confirmed. They looked at this, so the two data sources we had was our own and Surescripts and I think the point is that maybe we should check to see what we missed.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. One more technical detail since this is a technical detail power group. I would—I see you have REST with a star by it. You know RESTful for REST-style or maybe it's more important to say "non-SOAP" or something, because I don't think that those protocols would meet many criteria for being RESTful. They are web-service based but—

Brian Adams

This is Brian, again. We totally agree which ... to the asterisk. REST is often referred to as having multiple stages of adoption so we were trying to articulate this as literally kind of that first phase of just using HTTP to communicate XML services. There's a better way to phrase that, absolutely.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. I've heard it called little REST and big REST, but frankly I think that little REST is people that have just, that have said really you need using plain XML and HTTP. They're trying to sort of dignify it by dressing it in the clothes of its big brother. And we might do well to show that we're really talking about the common part and not just the debate on what is a RESTful protocol could tie us up for two years.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well ... REST is always HTTP, so it's kind of—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

That's true but not all HTTP is REST, and that's where we're having the—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Right.

Ken Tarkoff – RelayHealth – VP & General Manager

Now you guys know how complicated it was to try and put it on two pages.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. No, hats off to summarize it as well as you did. Some of these things will matter in the longer run so I mean, but we've been there before so some of this is arrows in the back kind of knowledge.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

This is Dixie. I have a question about the—it's the same question that Cris Ross asked actually in an email and that is, you know there are subtle differences between SSL and TLS, like in this case where you just have SSL, are you intending to make that differentiation or what—I think we probably should be accurate here.

Brian Adams

Yes. This is Brian. No, I believe that was a miss on our slide. The intention here is that there's a whole host of secure protocols of HTTP and they're all a variant of SSL, of which TLS is the latest version that most everyone is using. So that's what we intend to say for all of those that say SSL, TLS.

Ken Tarkoff – RelayHealth – VP & General Manager

So we can actually add—so we should change that to say SSL, TLS – add that to the slide?

Brian Adams

We can do that, yes.

Ken Tarkoff – RelayHealth – VP & General Manager

Okay. Good catch Dixie. Okay, anything else on those first two?

Do we—by the way, going back to the comment on the REST for the transport – Wes's little Rest, big Rest; do we have agreement on what we want to actually say there? We tried to do it through asterisks; I don't know if that accomplished it. You guys have been through this a couple of cycles. Anything we can learn from what we could say there?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Well I think we've seen—Gartner tends to see POX. I know XML used to mean XLM over HTTP little I specified. Here we are also specifying some level of security. I don't—I don't know that, I don't have a term really I guess that fits better, but I do think that using the term REST does generate antibodies in the industry that it could be worth avoiding.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. In some cases it's the negative that's the interesting thing here; it's not SOAP, in other words, as compared to some of the proposed protocols that are up for review.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

It's not SOAP, it's not OASIS web services, it's web services small s rather than—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

It's ad hoc HTTP-based web service.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes, so why not—

Ken Tarkoff – RelayHealth – VP & General Manager

Call it that?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes.

Ken Tarkoff – RelayHealth – VP & General Manager

Ad hoc—

Brian Adams

Is that what you said, David? HTTP—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes, that's what I said. Ad hoc HTTP web service which—it includes RESTful approaches but it's—it wouldn't need necessarily the criteria of a formal Roy Fielding definition of REST.

Ken Tarkoff – RelayHealth – VP & General Manager

I'm okay with that. We were struggling with that.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. It's a hard one. And you can't even say XML only because some of the newer ones don't always use XML, so—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

That's true. They use JSON now I guess.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

All the cool kids use JSON so.

Cris Ross – LabHub – CIO

I've got some heartburn at idea of the phrase ad hoc meaning unstructured, meaning uncommon. But that just draws us into the debate of did Roy Fielding define canonically what REST is and everyone else's implementation is somehow less.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I'm going to take us off of the Fielding dissertation and talk about the work that's been done on the field generated since the dissertation and I think there are items about the structure of URI, about the quality of—whether states are described in a way that's visible to the client or hidden behind the server. It's a bunch of things that are associated with “RESTful” beyond; we decided to use all the air codes in HTTP.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David again. And I certainly mean no negative by ad hoc; what I mean is that it's—the details are specific to the protocol as defined for this use case, using HTTP web services. It doesn't follow an externally defined standard.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Let me ask this question.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

—like SOAP.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

What's the difference between what we're talking now, HTTP-based REST web services in row two, and HTTP-based web services in row three? Is there a difference? Is there an intended to be a difference?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. I would say they're both what I would call ad hoc. Meaning somebody defined it; wrote it down and used it; but it's not based on an external standard like OASIS SOAP.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

And maybe—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Ad hoc is not intended to a negative. I mean it's a perfectly valid way to do it. Most web—most HTTP-based web services are done that way. Somebody makes it up, defines it, gets consensus. They may follow a RESTful style, which is a highly recommended style. But that's a style. It's not a standard.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

So maybe both of them should be ad hoc HTTP-based web services.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Or some better word. I understand, Cris, your point that ad hoc sounds negative. I didn't mean it that way. I'm just grappling for a better word.

Cris Ross – LabHub – CIO

Sure. How about the phrase HTTP-based web services.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Maybe that's good enough.

Cris Ross – LabHub – CIO

It seems inclusive enough because then you're not making a claim to REST which may make—may sound more codified than is appropriate.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

The problem I have with that is that there are those who will read web services to mean OASIS specifications.

Cris Ross – LabHub – CIO

That's fair.

Brian Adams

This is Brian. We put in an asterisk to just clarify that this means non-SOAP.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I think yeah, do that. Non-SOAP automatically rules out all of the other OASIS definitions, right?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

We could call it SOAPless, or—?

Ken Tarkoff – RelayHealth – VP & General Manager

Dirty, how about dirty?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Alright, come up with some words that spell out detergent as an acronym.

Ken Tarkoff – RelayHealth – VP & General Manager

It'll be productive use of our time, right. Alright, for that one and the first half of the one below we'll do HTTP-based web services with an asterisk and non-soap down below.

Cris Ross – LabHub – CIO

So before we close that I'd offer maybe as a candidate RESTful web API which is a phrase you sometimes see places which is constituted of, you know if you're using POST, GET, PUT; if you're using some sort of well-defined media type and there's a URI behind it. I just think there is an awful lot of codified programming does that happen using those set of services, so you know we can call it RESTful web services or RESTful web API.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I don't know this is the right—

M

Any other—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I don't know if this is the right place to have the discussion but I'm not in favor of that because of the—it opens the door to a sort of continuum of definitions of web services, of RESTfulness rather, that it is one of the reasons that many people object—I mean we all agree, this is something simple, widely used, and relatively trouble free. And yet every name we give it seems to link it to some school of more complex issues that raise antibodies. So I think we need to come up with a term that doesn't do that linkage and I suggest maybe we do it in an email or have the Brian and Ken Show come back with a suggestion or something.

Ken Tarkoff – RelayHealth – VP & General Manager

Oh Wes, buddy. That's—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I'm happy to have a discussion in email and come back and do this for the public later. I just think we understand what the concerns are pretty clearly now and I would be in favor of taking the discussion—let the discussion move forward.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. Thank you.

Cris Ross – LabHub – CIO

Agreed. Agreed.

Ken Tarkoff – RelayHealth – VP & General Manager

Agreed. Thanks, Wes. So let's move to the next one. Claims submission between practices, hospitals, health plans, etc., which are the HIPAA 837/835, 276/277 transactions. Again, we talked about the transport address, there is a FTP as well and a variety of different security protocols here. And obviously this is an extremely well deployed and penetrated capability in the market today and we tried, but there are a lot of options here so we tried to summarize all the different types of things that are out there.

For example—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

You included the CORE requirements in here? C-O-R-E?

Ken Tarkoff – RelayHealth – VP & General Manager

You know what? I don't know if we did.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Okay. You know I—I don't know enough to verify the claims of the CORE—been facing in the industry but they are almost, they are implied in the new regulations so I think it's worth—

Ken Tarkoff – RelayHealth – VP & General Manager

We didn't do it specifically, Wes. So that's a good—let me just go back and check, let me go back and check that. We just—one of the things we found, just as per those that were on the email – one of the challenges when we said VPN which is apparently a pretty—a dominant security protocol, there are a lot of different variations, including proprietary, so it got a little hard to summarize all those as we were seeing them because this is done so pervasively in the industry. It was hard to summarize—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

So I think we—we understand that VPN implies a sort of a specific ... agreement between sender and receiver.

Ken Tarkoff – RelayHealth – VP & General Manager

That's right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I guess they all do at some extent, but—

Ken Tarkoff – RelayHealth – VP & General Manager

We were trying to come up with a simple and then we just ended up giving a lot of examples. There's a lot there.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well some of them require that agreement ahead of time, like a real IPsec, a real VPN, IPsec agreement certainly requires it be set up ahead of time but frequently people refer to TLS transactions as VPN and TLS then is really—was really invented to be secure transport between where one side of it may not know the other side, so I wouldn't agree with the—I would agree with that with IPsec and MPPP—MPPE but not TLS.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. Okay, so I wasn't going to say anything new so I shouldn't say anything.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. I have a question, Wes. Could you summarize what CORE changes in this? I don't know enough about that.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I don't know enough either but that doesn't ever stop me from talking. The CORE has been working on standards based interoperability beyond the standard, meaning beyond the xfile standard for HIPAA administrative transactions for some years, and they've gone through several versions. And they include both implementation specifications that are more specific than the xfile published implementation guides for the transaction, and they include transport in and security specifications, and they include the—sort of the equivalent of the agreement you have to sign in order to interoperate. And I don't remember, but I think I remember that they actually use OASIS web services for the security and transport layer, which is why I thought it was important to A. Determine what the truth is about that; and B. Determine to what extent that particular level or version of the CORE operating rules has been rolled out.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So we have—

Ken Tarkoff – RelayHealth – VP & General Manager

So Wes—oh go ahead, I'm sorry.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David again. That was my recollection from something I think I heard Halamka or someone say, that CORE had assigned both SOAPless and SOAPy versions of these transactions and if that was the case, I thought you know that might be something that's interesting to pursue, given that that's—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes, well that's more than I know at this point.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

And I may be misremembering, but I thought that I read that somewhere, or heard him say that. That you had a choice—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

What registration were you referring to, Wes? You said that that was in—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

The overall generic name that CORE uses for each group of various things from operating agreements to security specifications to additional implementation specifications on the application format, the overall group of those things, I think, is called an operating rule. At any rate if you go to the CAQH website you can drill down into it and get all of the public information.

Ken Tarkoff – RelayHealth – VP & General Manager

Okay. Well we'll—you know when we went through the claims submission area we got a fair amount of help from our division that does those claims' group—the claims transactions today and so we'll go back to them and try to do some research there and Wes, if you have other places to direct us to check that, to make sure that we're inclusive of—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

No. I'm grateful to have you running this down because in the future as a Gartner Analyst I'm going to look smarter because the work you're doing.

Ken Tarkoff – RelayHealth – VP & General Manager

Well, good. Anything I've got to do to help, right?

Cris Ross – LabHub – CIO

Hey Ken and Brian? Excuse me, this is Cris. I'm looking at the protocols that are listed and I think—I wonder if we might also want to include eligibility transactions because they're the same thing; it's just an additional 272-71. But everything else to the right is the same. And so it's not just claims submission but it's also eligibility. Should we include that?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

It's on the next slide, right?

Cris Ross – LabHub – CIO

Is it?

Ken Tarkoff – RelayHealth – VP & General Manager

Yes. So we had it on—

Cris Ross – LabHub – CIO

Sorry. There it is.

Ken Tarkoff – RelayHealth – VP & General Manager

--Push scenario.

Cris Ross – LabHub – CIO

I apologize, sorry.

Ken Tarkoff – RelayHealth – VP & General Manager

Did you want it—did you think of it in the push scenario? Because we were thinking of it as the pull.

Cris Ross – LabHub – CIO

No, I didn't. I apologize. I just had a brain freeze. I wasn't looking at the slides that you distributed; I'm looking at the web broadcast. I apologize.

Ken Tarkoff – RelayHealth – VP & General Manager

No problem. No, that's okay. So, Dixie you made a comment about SSL/TLS so I don't know if I missed that. Were you making a comment about how it was presented, or was there something you wanted—you thought should be changed?

M

Dixie, are you on mute?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I'm sorry. I think you decided to make them all SSL comma TLS. There are subtle differences between SSL and TLS; they aren't totally synonymous and I was—my question was whether there was an intended—whether you intended to make the distinction and you said no, so I think the group said they should all be SSL.

Ken Tarkoff – RelayHealth – VP & General Manager

Okay, we got it. Okay, I got it. I just wanted to make sure I captured that. Okay, thanks.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. On the CORE thing, I just pulled up their website and on their so-called phase II connectivity they support both SOAP and as an alternate HTTP+MIME, multipart MIME. So they do have both choices.

Ken Tarkoff – RelayHealth – VP & General Manager

Okay.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

For what it's worth.

Ken Tarkoff – RelayHealth – VP & General Manager

Alright. Sounds like there's some research needed. Alright the next one we have, the fourth one, is patient health information between providers, and again talking about HL7 both CDA and ADT and although the market adoption today we put at low because a lot of it is addressed in a non—in an offline fashion, fax and courier today although there's a lot of push to get that to move. And there are a lot of things that fall in both the transport and at the security protocol. Obviously Direct Project is addressing a fair amount of this as well too. Any comments on that line?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I mean, the only thing you could debate is whether in your industry protocol you could put Direct over there simply because it is beginning to be used. Admittedly very sparsely at the moment, but—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well I have a question as to why—this exercise is supposed to be capabilities—mechanisms, extending to mechanisms other than Direct and Exchange that is in broad use today. How is this one not Exchange and not Direct?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I didn't know about the "other than" – I take my comment back then if it's designed to exclude that.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. This is supposed to be—you know, we already were looking at Exchange and Direct. So these are other, other Exchange mechanisms that are being broadly used in industry.

Ken Tarkoff – RelayHealth – VP & General Manager

Right so we could mean—you mean should we have taken out the reference to Direct? Because that would mean, the transactions are done at ... via HL7; for example, like ADT is today and there's a decent amount of that going on. Like this.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I see. This one. Yes, we should—well—

Ken Tarkoff – RelayHealth – VP & General Manager

It's still in there. I mean there's still—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I mean, what's really different about this is in the transport and security columns, not the others, is what we're saying. Because the—

Ken Tarkoff – RelayHealth – VP & General Manager

I mean, it was hard, I mean, Dixie, the challenge as we were trying to orient this is we were trying to structure it some way. So we were thinking the push versus pull, and then the different major workflows; that's how we tried to design it. It wasn't perfect as a structure. And so we were trying to identify the bulk of the areas. And this is one where there's clearly stuff going on in the industry today using HL7, for example, with a variety of different mechanisms. And it's not the industry adoption is low which is why you have things like the Direct Project catching on.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

... question. This is Wes. So I think we're talking about the bottom row on the first slide now, is that right?

Ken Tarkoff – RelayHealth – VP & General Manager

That's correct.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Okay. So is the framework for this inter-enterprise communications?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Okay. So whether MLLP is being used in hundreds of hospitals to connect their interface engine to the lab systems, it doesn't matter in this discussion?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Right. So—

Ken Tarkoff – RelayHealth – VP & General Manager

Inter-enterprise could also be—I mean it depends on your definition of inter-enterprise. I mean you could have a physician out in the community, you could have—I mean there's lots of different.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. I mean my definition is they don't all work for the same boss.

Ken Tarkoff – RelayHealth – VP & General Manager

Right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Implying that—well never mind. Not everybody works for their boss anyway, but—so MLLP or file system communication with enterprise system—I don't know, I don't think I know of a case where—I think it would be a HIPAA violation to just use MLLP outside a firewall, because MLLP transmits in the clear. Likewise, I don't know of that many inter-enterprise file systems per se, although there are products like Dropbox and there are protocols like FTP that allow you to get to the same level. So I just—I'm questioning whether—I see, the way you're saying it is – the security is actually covered in a different column than the

transport. So MLLP wouldn't run over HTTP or FTP; it could run over VPN so sort of you could match up anything in the transport column with anything in the security column and it falls in that row. Okay, I guess I could live with that. I mean it's a simplification, obviously.

Brian Adams

Yes. This is Brian. That's absolutely correct.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Okay. Sorry for the interruption.

Ken Tarkoff – RelayHealth – VP & General Manager

That's okay. And Wes—this is Ken. Wes, if you have ideas on how to present this differently, we're all ears. We're trying to—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

All of my ears always explode into 14 slides so let's not.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

But is a—I think that's a good question. This is Dixie. Are these MLLP and for both row and row four – are those actually used between enterprises?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. And then MLLP is literally the minimum protocol you need to send anything over TCP/IP streams. And particularly, VPN formulations using MLLP as the transport under the security blanket of the VPN - I would say that was the most prevalent implementation three or four years ago.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

And file system exchanges, like they just share files between enterprises?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. You can do that with Windows, right? You could have—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

No. I know, but would that be—?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. Now that I think about it that seems perfectly likely. I mean it's a typical scenario there, is you've got an incoming directory and every so often you pull the directory to see if there are any new files there. You've got a file naming convention so that two different outside resources that have access to your offering, or that directory, can't overwrite one another, and you move them from that directory to another one, process them, and then maybe you put a result file in an outgoing directory and it's pulled for by the—if they need that acknowledgement, you know it's pulled that way.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. Not too different in CMS or—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. It's very—in the early days of Internet use for X12 transactions, that over FTP or that over RS232 or modem-based proprietary communications program was probably the most common way to use the Internet. Might still be for all I know.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Okay. Are we ready to go to the next slide, Ken?

Ken Tarkoff – RelayHealth – VP & General Manager

Yes. I think so.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Unless he's feeling too beat up.

Ken Tarkoff – RelayHealth – VP & General Manager

No, no, no. This is fun. Hey, I'm the messenger here, right?

So, the next slide—so now we're talking about the pull scenario. The previous slide was trying to address the push; now we're in the pull scenario. Again, example here we did use Surescripts; we could make it more general for retrieving medication history. Again, using NCPDP protocol and we talked a lot about some of the changes—we'll make the same changes that we talked about on the previous slide, for the first one.

Any other comments on those, other than the things we've already covered that we'll address on this slide?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So, are you talking about the whole slide or just the—

Ken Tarkoff – RelayHealth – VP & General Manager

No. I was—we can do it either way. We can go through the whole slide if you guys want to, so I don't have to go through each one. I'm just trying to take notes if we have comments. We love input here because this was a challenging exercise.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So on the whole slide I think there are a number of non-standard approaches to retrieve documents and discover patient documents. You know Indianapolis doesn't run XDS to my knowledge. Tacoma doesn't run XDS. I mean there are a lot of other approaches that probably dominate, I would guess. They're just proprietary protocols.

Ken Tarkoff – RelayHealth – VP & General Manager

Okay.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes, I would agree. For two reasons. One is they precede XDS.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Or they have policy issues about the particular way XDS uses locator services.

Ken Tarkoff – RelayHealth – VP & General Manager

So how would we represent that if we talked about the scenarios and we would say proprietary transport, proprietary—?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Or just ad—again, I'd say that ad hoc, meaning it's—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I would suspect that for the security column it would be the same as the prior slide.

Ken Tarkoff – RelayHealth – VP & General Manager

All the different examples?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. So I'd just, I'm switched to looking at this on the screen and I can't see the—there it is. So it would be most like patient health information from one provider to another, probably. Because what it typically is is either a totally ad hoc or an HL7-based request followed by either a totally ad hoc or an HL7-based response. MLLP supports that being a single, coupled pair, that is the acknowledgement of the request is the actual meaningful response, but I wouldn't be surprised if in some places it's implemented with an acknowledged request of then the two pushes, rather than a pull.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. That's exactly what I was I going to ask. I'd suspect most of these are that.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

No. I think a lot—certainly, going from the days when HL7 was *intra*-enterprise, it was a true pull in the sense that the acknowledgement of the request was the meaningful response but I think some of that carries over to external systems. I know particularly in the X12 world the systems that were doing the response weren't set up to—they were sort of fact batch systems rather than true online systems. So they tended to work as two pushes but—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

But I don't think—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

--or push and poll later. Probably push and poll later is the third thing. That's p-o-l-l rather than p-u-l-l. I guess it's both poll pull. But I think that the true query response as a single pair of transactions is used in a number of HIE scenarios.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. The only one on this slide I think it's clearly a pull is FTP.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Well, I guess we have to define pull.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well you're actually versus—I want something and you can push it to me, versus an FTP you actually transfer the file to yourself in one fell swoop.

Brian Adams

This is Brian. If we're to rename this, this push-pull model a push and then maybe a query response model, would that be more accurate?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

That might help.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I think that's an important distinction for us to make.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I still think there's a distinction that's worthwhile between push-push-and-pull or query response as a single exchange versus query and response as two exchanges. And I don't know that the right words are to describe the distinction but I don't know—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Why does that matter to you, Wes? Because I would say even HTTP is a push followed by a remotely triggered push. I mean you can't pull data out of another system; you have to ask it to send it, even under the most tightly coupled protocols. I'm not sure why it matters.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Why does it—that's a good question. Why does it matter? Generally what I'm characterizing is a true pull rather than a request for a push is not handled with the protocols that lumps it together; so there's a lot more chance for requests to be lost. There's a lot—there's usually a much looser response time requirement associated with, I mean you don't use HTTP for an "I'll get back to you in ten minutes" kind of scenario, because as far as I know whereas a lot of these things that are characterized as pulls here, like eligibility information are, in fact, in the definition of real-time in the care industry is something close to the same day, I mean—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

But even, you could do an HTTP post and expect a post back at some point in the future. I mean—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I think the question is whether there's an immediate response that is implied by the query versus an optional response, maybe. But I don't know that if you can break it down at the technology level, because all of them are—

Cris Ross – LabHub – CIO

Well it's synchronicity but it's—it may also be who invokes the presentation of the data. So an example of the eligibility transaction, those systems stand ready to return data on any member number and pair that you submit. Whereas, potentially some others like going to look at a patient document or retrieve a document might be going into some sort of, you know, repository that was pre-populated in advance. Maybe a very fine distinction, but in one instance you're really linking two systems together in a little bit more of a synchronous way but also you're doing remote invocation in a way that—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I think it's a remote invocation that's the critical part.

Cris Ross – LabHub – CIO

Yes, exactly.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Actually, I think it's the synchronicity that's the distinction that I'm trying to get to.

Brian Adams

Yes, but this is—this is Brian. Just for clarity when we put the other in two different categories, the push and the pull model, if you look at the subtext beneath the bold title, we're trying to really specify who the initiator of the transaction was, and to set up the criteria for the transaction of information. For the technical construct, the what's actually the push and pull and is it a synchronous-type of transaction where I'm going to submit some work and then follow up to get the results of that work later; those actual synchronous versus asynchronous-type ... flows could work in either of these types of scenarios. So we were trying to leave that as an implementation detail and focus more on the workflow based aspect of push-push-pull. .

David McCallie – Cerner Corporation – Vice President of Medical Informatics

And that's consistent with the way the Tiger Team thought about the consent issues that directed exchange is an exchange of information where the sender takes responsibility for managing the consent because they know who the recipient is. An indirect exchange or those exchanges which aren't direct require additional consent because it's not known who's going to ask, up front.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

This is Wes. I'm going to accept that we have over-nerded this. I won't ... but we did over-nerd it.

Ken Tarkoff – RelayHealth – VP & General Manager

I think that's an accurate—this is Ken, Wes. I think that's an accurate description. That's what I was feeling like—because I guess the question is, back to the objective. One of the things we were trying to accomplish was could we put together an accurate representation of the types of exchange that were going on today in the healthcare system as we're thinking about foundational building blocks. And there are some changes that we've put on here and I don't know where we ended up in particular on this slide but I'm hoping that we're getting close to being able to say this is pretty close to a representation of the other types of exchange that are going on so we understand these are potentially candidates for foundational building blocks. Do I have that?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I think these last two—this is Dixie again. The intent for this exercise was to identify mechanisms other than Exchange and Direct, and I think these last two look to me like NHIN Connect, you know? So I don't think that's appropriate, because that's the other part of our work that we're doing with the S&I framework. So you know, I'm not sure—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

No. I would say that if you took off NHIN Connect but left the rows there, that it's reasonable to say that there's XDS.b/ being done outside of NHIN Connect.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. There's lots of XDS.b/ out—in fact 99% of it is outside of NHIN Connect.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Okay, then I suggest we remove NHIN Connect from those two rows.

Ken Tarkoff – RelayHealth – VP & General Manager

I'll take Connect and I'll take Direct out of the previous slides too, Dixie, that we were just—as we were summarizing, we were putting together. So we'll take the references to NHIN out.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I want to continue to try to hyper-nerd this. One of the sort of original discussions we had around Direct was is there a difference between a pull and two pushes. And at some logical sense, and that's the logical sense of the second slide, there is no difference, alright. What I'm—the question I'm asking and for the transcriptionist this is Wes, the question I'm asking is, is that a distinction that's important enough to be made, even at the cost of going to a third slide.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I think it's critical to make that distinction. For the very point that David McCallie said in referencing the Tiger Team's work, where all the time we spent on the Tiger Team talking about where control lies. And who makes—who actually makes the access authorization and mediates the access, I think that's really important.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I would argue that that doesn't justify two slides because if you look at the top of the second slide, it's true for two pushes that the recipient triggers the exchange and sets criteria for what is to be received.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

It doesn't mediate the access. Doesn't say—they aren't—the recipient is not the one that says “I authorize myself to get this information.” The source of the information still mediates the request.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I guess that depends on what you mean by sets criteria. At an application level the source sets the criteria. The question is—okay, so the question is do we need to answer another question of how is this mediated. Push, because there is no other option, well no—push could be a mediated push too so there could be that there's an HIE all transactions flow in a star through the HIE which decides whether it gets to ask C for something, for this data or not. Or it could be point to point.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Isn't what—this is David. Isn't what matters whether you're sending information at your initiation or whether you are receiving information at your initiation?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

That's the level of abstraction we have here and I'm—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

What's missing from that? I think everything is push-push under the covers.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Not—FTP is not.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Well, it is. FTP sends a “get” request across the wire and the other system sends it.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

FTP, get FTP—no, those are not two requests. FTP you can say “FTP get” – you don't have to say F—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

But when you say “FTP get” on system A, a message is sent to system B that says “A wants this. Send it to him.”

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Under the covers.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Under the covers, in other words the question is just in what protocol layer does this exchange happen.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. And that’s pretty—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

And if you did an “FTP get” and the remote file system doesn’t have access privileges to get the object you named, they’re not going to send it back to you. I mean I don’t think there’s any difference here. It—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

An “FTP get” is not the same as an “HTTP get.” HTTP is higher in the stack. FTP is lower.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

No. It doesn’t seem lower.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Does it matter? I’d say they’re the same level but it doesn’t—why does it matter to what we’re—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes they do. I guess they send—well no, they don’t really mediate the, well yes they do. They set the accesses on the directory that they make accessible through—

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

FTTP servers, I’m sorry HTTP servers very often will say “you’re not allowed to see that page” so it’s really—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes, they do; it’s both. Yes, you’re right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

David’s point—so I’m, if I can’t come up with an answer to David’s point that’s really always, all requests are always responded to by pushing data; it’s just a case of what level in the protocol it is, then I need to shut up. And God knows, I hate to shut up, so—

Cris Ross – LabHub – CIO

Well you shouldn’t shut up. This is Cris. Because I think we’ve got two nerd conversations going here; one is the tech nerd conversation which is interesting I think we’ve exposed, but the other one is the policy nerd one which is what did the Tiger Team mean when it wanted to have certain parties have certain rights to invoke certain things and to control access to data and all the rest. And I think we’re talking about both of them, simultaneously, and we might want to keep them apart a little bit.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Well no I think—I think we're at the point now where we have to keep them apart. David has made the statement that the Tiger Team was indifferent to whether a—whether there is or is not a distinction between a push and a responding push, or a pull.

Cris Ross – LabHub – CIO

Exactly.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

And at that level the current sub header on this slide is completely appropriate.

Cris Ross – LabHub – CIO

Right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Where I get concerns is that there is, to me, at least I feel like or I imply that there's, I infer that there's a distinction in terms of—alright, I'm back to saying we're over-nerding it. I'm back to—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I'd like we need to get to the—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Here's a really nerdy thought. I think if we invoke quantum entanglement, we could probably have a true pull.

Cris Ross – LabHub – CIO

I think you're into geek now, David. Well past nerd.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I think we need to get back to the purpose of this exercise.

Cris Ross – LabHub – CIO

Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

The purpose of the exercise was to help us identify other components that are not Connect and not Direct, that we might include in our recommendations as potential NwHIN component.

Cris Ross – LabHub – CIO

Correct. Nicely done.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

And Dixie, to that end I want to add one more suggestion to this slide but it's at a high level.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Which is I think by far and away, the most common way that information exchange occurs today in this pull scenario is just a simple webpage. And by that I mean system A logs into a remote service system B,

issues a query and gets a result displayed in the browser which they may print, they may cut and paste from, or they may just read and act on. But there's no actual protocol other than just a webpage. I mean that's the way most of these things work today.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

It's readable information for a person as opposed to—and certainly in any, even not necessarily a webpage; there are certainly a lot of EHR products that have, for example, a tabbed interface and when you click on one tab you're actually looking at displays sent out by a different system with some context, maybe some context that change in the background.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well I think that's a legitimate row to add.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes, I think so too.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

That's all, I was just going to say—that's the, kind of the equivalent of the facts use case on the previous slide. It's really common. It doesn't actually transfer machine-readable data unless you do tricks like cut and paste.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Or Microdata.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. Or Microformats, right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Unlike the facts use case, it doesn't make your fingers dirty though so—

Ken Tarkoff – RelayHealth – VP & General Manager

Does it qualify for exchange? The word exchange?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

It certainly qualifies in the policy sense of exchange, because information is flowing.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Yes. No I think including it as a baseline row, you know—you don't have to expand the numbers life to do that.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Good point.

Ken Tarkoff – RelayHealth – VP & General Manager

Alright, we'll do that.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

It's just retrieved data through web interface, is what it is.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

Well it's—well never mind.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

The point, I mean to Dixie's somewhat in jest point about microdata, I mean you could, in fact, embed extractable data in a webpage. We're talking about doing that for these directory service models.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

That was not in jest; that was serious.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Exactly. I mean it is a legitimate approach. It's the low-tech but you can exchange real XML-encoded or JSON-encoded data.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. Okay? Have we given you enough feedback, Ken and Brian? That you can kind of take our feedback and send out an update and we will present this to the committee.

Ken Tarkoff – RelayHealth – VP & General Manager

Okay, great. We'll definitely take that feedback and we'll send it out and then I would encourage you guys all to read it to make sure we presented it the way we talked—we talked about a lot there so I want to make sure we do it—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

And I think we still need to take the extra step of you know, perhaps after we finish the NHIN Exchange and Direct, look at this and say are there some real components here that we should recommend be part of the NHIN toolbox?

Cris Ross – LabHub – CIO

Agreed. And Dixie one of the things—this is Cris, I was going to suggest is when we're done with this it might be interesting to then do a version of this that does include a NHIN Exchange mapping against these, and a Direct mapping against these, right? So that you can have three potential versions of this. One which is NHIN Exchange, the other is Direct, and the other is sort of other standards that are in production today.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well keep in mind that the task of this Power Team is to identify beginning with the NHIN Exchange and Direct. You know, specifications, components, modular components that can be used together. And I think once we get that work done, if we revisit this we might see additional components that aren't already covered.

Cris Ross – LabHub – CIO

Agreed. I think my point is just to simply deal to compare the three different sort of main categories, right? NHIN Exchange, Direct, and other standards, in sort of a side-by-side fashion. So maybe we'll ask ONC staff to follow on that work and do that same mapping that Ken and Brian are doing.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

I'd like to say first that I think seeing everything lined up together in the same table, including the baseline of what was given before this study makes a lot of sense. But my main point I wanted to make here is not only—repeat the congratulations to Ken and Brian for the work, but also to congratulate whoever asked

for this. I mean it just is remarkable to me that we've gone as far as we have not having this information pulled together. So I think this is enormous contribution here.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I agree. Thank you, Ken and Brian. We really appreciate this work.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. Can I raise one more point before we go off this segment? And it's more of a homework assignment. I find it hard to believe that there is no—I'm thinking now on slide two here, the pull scenario. Hard to believe that there's no other structured exchange of information in a query response model other than the three that we've listed here, and general purpose web browser which we've agreed to add. So I think we need to go figure out what we've missed.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

You mean no other scenario.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. I mean there's no—are you saying there's no other used protocol where one system can query another system for data, that isn't XDS or HIPAA X12 or NCPDP. I cannot believe that.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst

So you're talking about a protocol now. I mean I'm trying to decide whether you're talking about scenario column or protocol column.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Well the scenario, there'd be an entry in all the columns. It'd be a new row. I'm just—my intuition tells me we're missing something here. And maybe it's just the one that I was referring to as ad hoc but you know if I want to pull data out of Health Vaults or something, what protocol do they use? I'm pretty sure they don't use XDS.

M

No, they use REST-based...

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Okay, so where's that row? REST-based or RESTful or ad hoc RESTful or whatever we want to call it. Did we agree to add two rows to it? One for browser and one for—?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

That's really rows one and two; these are scenarios, but as far as the transport that's rows one and two.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So, but rows one and two are NCPDP and HIPAA X12, what's—?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Oh, in the content, yes.

Ken Tarkoff – RelayHealth – VP & General Manager

You're right. That's a good point.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So Ken, there's two missing rows.

Ken Tarkoff – RelayHealth – VP & General Manager

Got it.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

REST-ful and browser.

Ken Tarkoff – RelayHealth – VP & General Manager

Got it.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Okay, now I rest my case.

Ken Tarkoff – RelayHealth – VP & General Manager

We'll add that one; that's a good catch, thank you.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Okey-doke.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Good point. Good point. Okay. Are we ready to move on?

Cris Ross – LabHub – CIO

There's more?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Is Avinash on, today?

Avinash Shanbhag – ONC – Director, NwHIN

Yes, Dixie. Good afternoon. Sorry, I got in a little late but enjoyed the nerdy conversation. So I'm ready, whenever we can get started.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Oh I see; you had these all in. So the next topic is the Avinash—I know we're, we only have 25 minutes but let's at least walk through your update if we can. Thank you.

Avinash Shanbhag – ONC – Director, NwHIN

Thank you. Thank you, all. Does everybody have the slides that Judy sent out? It's the one that has 7-26-2011 file name.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

And it's up on the screen as well.

Avinash Shanbhag – ONC – Director, NwHIN

Okay, great. So why don't we go on, in the interest of time, let's go down to step three. What I'll do is try to kind of identify some of the changes that we made to this slide deck based on the feedback from the last time. So if you go to the slide three, which really kind of has the summary of the changes that were requested. I think at the last meeting of the group requested to actually add a need criteria to the list of our criteria that are used for specifications and really use that as one of the objectives.

Also we looked—we were asked to look at what I call here as the standard implementation maturity. I think we initially picked that as a technology maturity but I think just to kind of make sure that we are technology agnostic I think, wanted to ... make sure that we put in some kind of a majority life cycle criteria. Also make use for any existing specifications and to look at it from a broader market adoption and not just focused on health care.

So with that, going to the next slide, some of the changes - I think in this slide the big change was in the addition of the criteria for need and really what we did was break it into three categories. I think we said on one hand we said well if we thought that a specification was needed for meaningful use, then we consider it as a high, highly needed and then based on the other two needs that we talked—we wanted, we could kind of identify whether it was a needed or some federal agency needs, potentially CMS or any other agency regulations needed it, or we saw it as part of anything else that potentially could fit into that bucket. I think we called it other national HIT needs. But really that was kind of the bucket for all other things that didn't really neatly fit into the meaningful or federal agency needs.

Going to the next slide, here's where I think we added in the layer of the criteria for maturity lifecycle. I think we broke it into four categories. I think the emergent specifications, those that we felt did not really meet this expectation I think we called it a trough of disillusionment here. And then going back to maturing and then mature standards.

And finally anything that also make ... if there were available, and I think alternatives I think we broke it into whether they were available, yes/no, or whether there were pilots in place to kind of tell us ...

So going to slide five, this is now kind of the table that we had described last time. We added a few more columns to it and what I'll try to do is try to kind of talk through some of the newer columns and see if there are areas that we changed based on kind of the comments we got and further analysis. It's important to note that I think, and I think about the comments I got when we talked back with ... was to kind of make sure that this team realizes that the survey that we based some of our assessment was really based on a very limited—we didn't really do a large scale survey. So really the results, at least for some of the specifications used from Exchange, were really focused on surveys sent to the federal agencies that are currently using those specifications.

So here in the messaging which would be the SOAP messaging specification going through the first row, it seems like the need is pretty high. It's part of—I think we feel it's part of the meaningful use requirement of Direct and Exchange. Also, we find it's used by federal agencies substantially and the SOAP stack seems to be fully mature. Alternatively, I think as we discussed in the previous slide, previous discussion, I think that our REST factor I think was the term I used in here as a viable alternative which kind of encompasses the non-SOAPy REST services, and Direct Transport could also be an alternative here.

Authorization framework, very similar kind of terms I think. Highly needed, mature, and here in the alternatives I put in "maybe" because again, our initial analysis on some of the security framework, especially in the area of Direct seems to be still in the process of maturing and capabilities are still being developed to SNI and other initiatives, so didn't really feel strongly that it was there.

Web service, I just used the one interesting specification where if you look at the lifecycle, the maturity lifecycle, really only felt that it had not seen the level of maturity that we are expected, and really we didn't see a lot of usage of it across in the ... so this may be a little harsh but put into the trough of disillusionment category; whereas, if you look at the column need it seems to be a pretty moderate to a high need in the sense here we found a gap where there was a need for some kind of a directory but

existing specifications that can run that at least used in Exchange UDDI did not seem to kind of meet the expectations of our need.

Patient discovery and query, the last two rows—we put them in the need column. We made it a low need; not necessarily because they're not used but again I think if you look at our criteria, it's not really spelled out in meaningful use at least for stage two to actually have this kind of patient discovery, query and the response or the retrieval in document as needed. But you know it's quite important to the federal agencies. Also in terms of lifecycle, it's kind of in the maturing model, I think very similar to the previous conversation we had with the—on the previous presentation. It's used, it uses IHE profile that's maturing but it does not have the wide matured base.

Going to the next slide, again a ... of some of the remaining specifications. Not much change in here. I think things that I would like to point out here is if you look at the document submission specification, one of the things we found here is that while it is needed by CMS, a potential alternate usage is Direct-based transporter, a push based transport that we discussed could potentially be a fairly viable alternative to the document submission specification here. And retrieve document, again I think if I look at it's in the same category as query document where it's a federal agency need and the specification is maturing, but potentially something like a REST, non-SOAPy ... could potentially be an alternative with appropriate factors.

Going to the next slide, again in this slide which are really the remaining two specifications, administrative distribution very similar as the document submission; I think it's, again, one of those specifications which is much more of a push kind of use case, so potentially alternate usage of Direct Transport could be a viable alternative.

And esMD I think are very similar in terms of potentially being able to use Direct Transport, while the specification maturity and market adoptions are still pretty low.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

And I think today we've identified others that could be used for that.

Avinash Shanbhag – ONC – Director, NwHIN

Absolutely. Yes.

And then finally rounding it off with some of the two remaining direct specifications; here, in terms of the lifecycle I think the transport lifecycle ... was mature, whereas the security model for Direct in particular is still in the pilot phase, so I would consider—we considered that as maturing.

Also one change we did from the previous presentation we did last time was in the spec maturity. I think previously in the ... we had considered the Direct Security Model specification as I think moderate to high. We actually lowered that to low to moderate just based on the feedback that—and more information on some of pilot work so that's one change we felt was needed. So we kind of dropped it down just a little bit in terms of maturity.

So that was the changes. The next three slides are really the mapping of those—the subjective assessment into the 3x3 grid. So I don't know—how much time do I have? Do you mind—?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Why don't we take some questions on what you've presented, and as it—I have one that I'd like to pose to you and that is having to do with web services registry. And you have the need as moderate to high

and an alternative to provider directories as—it sounds to me like the need has not been articulated exactly. Because you know, web services—UDDI registry is not, you know, is not just for provider directories. It's for services and it's for automated access to services and service interfaces, etc. Have we clearly defined, or is it clearly defined maybe in the specification, exactly what that need is that you've assessed as moderate to high?

Avinash Shanbhag – ONC – Director, NwHIN

Good question. I think the need, and really this is in a certain sense subjective. From what I—and maybe this is the understanding I had. I think from whatever I've been looking at from hearing from the HIT Policy Committee and some of the discussions on our Standards Committee, I think what I—what we found was there was a general need for directories but I think your point that really there's a distinction to be made between provider directory versus service directory, I don't think that's spelled out. So you are right in that sense. But the need here, the high—the high need for registry really seems to moderate to high seems to come from just listening to the some of the comments and discussions from the Policy Committee and Standards Committee in this area.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

So that high need is really for a provider director capability, not for this discovery.

Avinash Shanbhag – ONC – Director, NwHIN

Right. Okay. Yes. That's a fair statement, yes. That's why, in a sense, like potentially the web services there may not be a need for this stage.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Are there other comments?

David McCallie – Cerner Corporation – Vice President of Medical Informatics

This is David. I think this is a tremendous amount of work and it's really nice to see it all lined up here. My concern is really more theoretical that it mixes apples and oranges and kind of implies they're all on the same scale and I don't know that they are. I mean I guess what really, what matters what comes of this. But you know messaging, what you call messaging just the CORE SOAP transport, I mean I'm not sure why that's on the same slide as something like patient discovery or query. I mean because those would typically be layered above and below each other.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Well if you think—put it in the context of what our Power Team has been asked to define; is a set of these building blocks. And one might be messaging, SOAP messaging and another might be patient discovery that runs on top of SOAP messaging. So they really are building blocks they're intended to work together, and our ultimate objective is to look at this work that's coming out of the S&I framework and to make a recommendation on—which is where Avinash is just getting, on which really are candidates for these building blocks.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So if SOAP messaging is on there, why isn't RESTful messaging on there.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Because right now we're just looking at NHIN exchange specifications. And it's not—RESTful is not an NHIN—that's part of why we did the other exercise that Ken talked us through today. So we might ultimately you know—ultimately the building blocks might include SOAP messaging and RESTful messaging. I mean our recommendation might include both of those.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Yes. I guess—okay, well I'll have to see what we try to do with this.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Because you can't put RESTful messaging if you're doing an assessment of the NHIN Exchange, and you'll notice that he does list on that sixth column right here as an alternative. He lists—they list RESTful.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

No, I know – I saw it. I saw that. The content is fine. I didn't realize that it was restricted to just protocols or whatever that are in the current exchange spec.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. Look at the title.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

I read it now, Dixie. Thank you for pointing it out.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Okay. Alright. And then the next thing we're going to do is do the same with Direct, and as we discussed just a few minutes ago ultimately we'd like to look at this Direct and the work that Ken has been needing, to draw our recommendation. So are there other questions? Comments? So would you like—you know, we are running up against time. Avinash, why don't you finish these last couple of graphics and then we can make comments offline and schedule an additional meeting to further discuss it.

Avinash Shanbhag – ONC – Director, NwHIN

Sure. Thank you, and I think—it's a good point. I think really that the next step, mapping and adding in the REST and the un-SOAPY approach, I think, would really be useful.

The one slide that I think in the interest of time I think I might want to point out is the one with potentially—on slide 12 if people can—if you can all go to slide 12, and look at—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Which?

Avinash Shanbhag – ONC – Director, NwHIN

Which is really the maturity and on the ... the life cycle. What I—and if you look at our ... model of the right most quadrant, the highly mature and the lifecycle, mature lifecycle, the right-most quadrant being the mature specification, what I'm kind of painting is that would be kind of the set of specifications. You know, right now we have messaging, authorization framework, direct transport, and potentially a few others from that list and the like up from REST could potentially become the building blocks of NwHIN and some of the challenges I think for all of us here and for this group would be to determine whether—at what level of specificity those components need to be at. I mean, for example – this patient discovery, query and retrieve kind of go together but they are kind of as a much more, rightly so in a different context than SOAP messaging or SOAP security. I think that's the kind of—because that's the route to me as something that—as part of, in light of this analysis.

And just finally if you go to slide 13 which is really the grid, the ... specifications, I think this is the one that we saw last time. I think this was the kind of breakdown or stratification of specifications that potentially could be useful for us as part of—as this kind of see work moving forward where we have—you know we can identify some national standard that we know would allow exchange to occur through mature specifications, but also then have pilots or I would consider them as maturing specification standards to

be considered in the future, and there's some emerging standards that that can potentially follow through. I think that's the kind of like stratification that would be—that at least came out of this exercise for me, and I found that to be very interesting.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

You know, this illustrates a comment that Doug Fridsma made right at the end our Standards Committee meeting that, right after I had presented this work from this Power Team, and he said that this work will determine whether ONC should invest in standards development work. You know, ... with SEOs who advance the standards or in trials to advance the adoption of existing standards, and I think that that's exactly what you're saying here. You know the light blue or potential investments in maturing the standards and the medium blue are where do we need pilots to really advance their adoption.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So this is David. I have one concern, just to throw out. I know it's a little bit out of scope but a standard which is mature for use at enterprise-scale does not mean, necessarily, and I'm sure there are good cases to illustrate this, that it is mature for use as national scale. So, for example the fundamental architecture of the NwHIN or of Connect predicated on the notion that the patient's record could be distributed all over the country and you don't have any good way of finding out where it is without blasting out thousands or queries, isn't probably a very scalable approach once you leave the region that you're in. So it's highly mature or it's reasonably mature for small scale use, but it does not scale to national use. How do we capture something like that? Or at least one can hypothesize that it doesn't scale for national use; never been tried.

Avinash Shanbhag – ONC – Director, NwHIN

Yes. This is Avinash. I mean again, that's the struggle that we have. And that was really the genesis of seeing that there are ways by which we can identify components that we could stratify in this category. So, again throwing out as some idea that really something which we've been thinking here is to see if there are ways by which, if they're truly not national levels, so they're not at the level of the scale that we are comfortable with, then they would not be part of national standards so we might end up not having the patient discovery, a query response, those specifications that require a blasting of queries at large number of nodes to be part of national standards. But have them be part of whatever the light blue—I think we picked pilot in production but it could be part of whatever the enterprise level specification. I think the terms could vary but we could kind of—what made them still be available to the NwHIN umbrella of specification so that any future usage by entities that do want to use that kind of use case would still come to and use these specifications instead of building their own. I think that—does that make sense? That was the kind of like thinking I had in mind when we kind of looked at some of the specifications that are in use but not at the scale or level that kind of put them into the national level usage.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

You know, I mean—this is David again. I appreciate that given what your challenge was you've done a nice job of it. I just think there are—if you want to get nerdy again this is a multidimensional grid, it's not just two dimensions. There's a scalability grid, and then there's a—I mean a scalability axis maybe comes out of the page at you, and then there's a functionality axis, so some of these are mature and perhaps even scalable standards, but aren't functionally right. They don't do what they need to do. So for example, XDS.b/ it handles simple documents but it doesn't have a search function to speak of. You now, is that going to be acceptable to clinicians who have to wrestle with lots of data coming in from remote sources, to not have a DEAS-like search function. So I think these are—you know this is two dimensions out of potential multi-dimensional cube and we've only covered a few of them.

Avinash Shanbhag – ONC – Director, NwHIN

Yes. Couldn't agree more. Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

We're two minutes past, three minutes past our ending state—our ending time. What I think we should do is to schedule another meeting to really discuss the specifics of this work. Avinash, and I also would like for your team to consider how you might take the work that Ken Tarkoff's subteam has done, and possibly incorporate it into this process.

Avinash Shanbhag – ONC – Director, NwHIN

I think that's a good idea and I agree with it completely. I'll follow up with Ken offline and see how we can incorporate some of that information into a common structure and send it out.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Okay. Okay, with that—and I'll work with Judy to schedule a follow on meeting and Judy I think we're ready for public comments.

Judy Sparrow – Office of the National Coordinator – Executive Director

Yes. Thanks, Dixie. And operator, can you check and see if anybody wishes to make a comment to the team?

Operator

We do have public comment.

Judy Sparrow – Office of the National Coordinator – Executive Director

Okay, can you please identify yourself?

Karen Witting - IBM

Hi, this is Karen Witting from IBM, and I've been following this debate very closely and really appreciate the extra detail and more explanation that I saw today. I just wanted to clarify a couple of things.

One, I am very involved with the Web Services Registry that was developed and Healthcare Provider Directory now. And they actually are solving the same need, although they have different names. The Web Services Registry was designed for a search for a service; at the time we were only supporting web services, so that's where the name comes from. Provider Directory is the use case that we're working on; it's a search for electronic address or service information, so it's really exactly the same thing. It's a search for where can I communicate electronically about healthcare information. So even though the names are very different, they're serving the same purpose. And I certainly agree with the analysis you did of the Web Services Registry, in particular the standard is in the cross.

I was very confused about Director Security and perhaps I misread the slide, but I saw (XDR) underneath it and I didn't understand why that was there. So I don't know what you mean by Direct Security; I don't understand the distinction between the Direct Transport and the Direct Security because don't you need Security in order to do Direct? So why are they separated? So I just, I hope that eventually that clarity will come through. What the distinction between Direct Transport and Direct Security is, and can we use them independently is what I'm trying to understand.

I'm wondering how you're assessing market adoption, because we do have many products implementing query and retrieve, so I'm looking for what number are you looking for. Because I can get more information about what—how many those products are. But if you're not talking about hard, fast numbers then what is it you're assessing in terms of market adoption in terms of products, implementing things.

And I was not in agreement with document submission stack is as mature as query and retrieve; in fact, it uses the same mechanism so it's very, very similar. Although I do agree that the adoption is less.

Interesting comment about blasting of queries. I was developing—you know, patient discovery was one of my babies and we talked at great lengths about blasting large numbers of notes. And it is true, the patient discovery has some question about what are you blasting and how many places and unfortunately, I haven't heard an alternative to it, so interested in that.

Now, the query is really not a blast. Because by the time you get to the query you've already identified that that patient is a valid patient in the place you're talking to, which doesn't usually translate into thousands and thousands of places. So yes, really could—interesting discussion on patient discovery in terms of how to deal with that problem We talked about it—I'm at least ten hours a week for a almost a month and this was the best we could come up with at the time.

So thank you for listening to my comments and staying late for them.

Judy Sparrow – Office of the National Coordinator – Executive Director

Thank you, Karen. Any other comments?

Operator

We have no more comments at this time.

Judy Sparrow – Office of the National Coordinator – Executive Director

Okay. Dixie, any last words?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

No. I just want to thank everybody once again for dialing in today and I'll look forward to our continuing discussions. Also, thank you especially Ken and Brian and Avinash for all the work that you're doing for us here.

Public Comment Received During the Meeting

1. I would like to suggest that the transport column of the bottom line (patient health info from one provider to another) should contain "Doc Submission (XDR)"

2. In addition to David McCallie's comment on the SOAP layer, it seems that Messaging SOAP cannot have a different market adoption than Patient Discovery, Query Retrieve .in NHIN, as the two layers are always used together. I recommend that Patient Discovery, Query Retrieve. Should be at a moderate/high adoption level.