Collaboration of the Health IT Policy and Standards Committees

Interoperability Experience Task Force Hearing

Draft Transcript

May 6, 2016

Presentation

Operator
All lines are bridged.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
….with the Office of the National Coordinator. This is a joint meeting of the Health IT Policy and Health IT Standards Committee's Interoperability Experience Task Force. This is a public call and there will be time for public comment at the end of today's call. I apologize to all of our members and the public for opening up late; we have a lot of materials to upload and we appreciate your patience with us. We should be live now with the Adobe connect. Also, just a reminder to everybody, if you could please state your name for speaking that would be appreciated as this meeting is being transcribed and recorded. So I will now take roll; Anjum Khurshid?

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Yes, I'm here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, Anjum. Jitin Asnaani?

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
Good morning.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, Jitin. John Blair? Cris Ross? George Cole?

George Cole, MS – Principal Scientist, Community Solutions – Allscripts
Hello.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, George. Jane Perlmutter? Janet Campbell?

Janet Campbell – Vice President of Patient Engagement – EPIC Systems
Here.

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

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, Jorge. Kelly Aldrich? Larry Wolf?

Larry Wolf, MS – Principal – Strategic Health Network
I'm on, thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, Larry. And Larry Garber?

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Excited to be here.

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

Philip Posner, PhD – Patient Reviewer – PCORI
I'm here, good morning.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, Phil. Shaun Grannis? And Ty Faulkner?

Ty Faulkner, MBA – Adjunct Professor – Lawrence Technical University
Present.

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

Ty Faulkner, MBA Adjunct Professor – Lawrence Technical University
Hi.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
From ONC I know we have Stacy on the line, is there anyone else from ONC on the line? Okay. Because we are running a little bit behind, I'll quickly turn it over to Jitin to make a few opening remarks and then I'll just say a few reminder items and then we'll get started with our panels.

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
Okay terrific, thank you Michelle and thank you everybody for jumping in, for participating today. As you may or may not know, the Interoperability Experience Task Force is trying to put together a set of recommendations for ONC and other stakeholders as to what gaps in the experience of interoperability we should be, or the na…or, you know this organization should be focused on to move the needle for…on interoperability nationwide.

The Experience Task Force has quite a bit of depth and breadth within it, but it's nowhere near the kind of comprehensive opportunity that we can…we have by, you know holding this type of hearing and inviting implementers and experienced professionals around the community to come and tell us about their interoperability challenges, as well as any solutions they've identified or are still looking for really, because at the end of the day what we like to do is be able to figure out where are those gaps, where are those places that there really isn't sufficient innovation or sufficient of a solution that is broadly dispersed such that we can focus on it at a national level.

So again welcome, thank you so much for being here. I'll ask Anjum, my Co-Chair if he has anything else he'd like to add, but I'm looking forward to the discussion today.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Thank you, Jitin and I'll just welcome and I'm looking forward to hearing the opinions and learning from them. Thank you everyone for participation.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
So thank you Anjum and Jitin. We still aren't fully uploaded, so I'm going to kill some time and remind folks again, when we open to questions, there's the hand-raising feature, hopefully you can see it how, the little man with his hand up; If you want to put yourself in the queue for questions; that's just for task force members when we open up for questions to the panelists.

So let me go over who is on Panel one and who is with us today; I apologize in advance if I say your name wrong. So our first panel is healthcare stakeholders and the first person on our panel is Christina Caraballo from Get Real Health. Then we have Steven Lane from Sutter Health and then Anna McCollister-Slipp from Galileo Analytics, and Edwin Miller from Aledade.

Just a reminder to all of our folks on the phone how today's meeting will work. Each panelist will be given five minutes for oral remarks. Most panelists have sent us a couple of the Power Point slides to review as they share their oral remarks. After each panelist has gone and shared their five-minute remarks, we'll then open up to questions from the task force members. So, I think we're getting close. Lonnie, can you let us know, should I wait or should we just get started with our first panel?

Lonnie Moore – Virtual Meetings Specialist – Altarum Institute
Yes. Michelle, yeah, please just stand by, it's coming out now and I'm actually going to share my screen to share the presentations today so just bear with me.

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

Lonnie Moore – Virtual Meetings Specialist – Altarum Institute
Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
So, I apologize to everyone.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
And since we have time, this is Anjum Khurshid, again I'll add a few words that I think as we prepare for these hearings, one of the things that we have been trying to do at this task force, I think is because the interoperability field is so broad and there are so many topics, is to really try to get to some the top priorities that we can address nationally and that will be impactful in improving the experience of providers and patients.

And so that is a focus that we have kept, throughout our work here, and I think that's what ONC and the joint committees are looking from us in terms of recommendations. So, as these experts present, I would urge our task force members to try to at least get as much out of these hearings so that we could focus our recommendations that go to the joint committees. So, I see that the slides are uploaded now.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
So perfect timing; thank you, Anjum. So if we are all ready, so we'll start with Panel one, our healthcare stakeholders and Christina, whenever you're ready, please go ahead.

Christina Caraballo, MBA – Senior Healthcare Strategist – Get Real Health
Okay, thank you. Are my slides in here?

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
They should be.

Christina Caraballo, MBA – Senior Healthcare Strategist – Get Real Health
I'm not seeing it, oh, there we go. Okay, so you can just go to the first slide; thank you.

Good morning and thank you for your interest in interoperability as it relates to the patient experience and the opportunity to share our biggest challenges, roadblocks and lessons learned. We are undergoing a massive transformation in our healthcare delivery system. Game changing initiatives to achieve our vision of leveraging health IT and reshape healthcare are helping shift to value-based care.

The Interoperability Roadmap and the Federal Health IT Strategic Plan strive to achieve person-centered care. We are in the midst of ironing out how we get there with conversations like this one and policy initiatives like MACRA and the ONC Interoperability RFI. There is a big focus across the board on how we

can better engage patients, give all consumers access to their health information and focus on people, because after all, this is about every single one of us. Not to mention it's our civil right to electronically access our health information when, where and how we need it.

We are seeing APIs come into play and there is a lot of buzz around how we will enable data to go from EHRs to consumer facing applications. The problem is that the data has to flow somewhere that enables applications to access it and trusted connections for it to flow from point A to point B and C and D and so on are the key. If we want to successfully realize our vision of patient engagement, we need to reset our way of thinking when it comes to interoperability.

We have focused on interoperability as it relates to the way traditional EHR vendors are interoperable and how critical access hospitals, eligible hospitals and eligible professionals use certified electronic health technology, but that's not enough. The groups that we are missing are those who will truly leverage the clinical data and marry it with the patient-generated health data; for example, the research networks that we are seeing become more vocal and active as well as others, such as mental healthcare providers and long-term care facilities.

Before I dive into the weeds, I want to say that I am very proud of how far we have come as a nation, but there is still a lot of work to be done. When it comes to technology that will benefit consumers, it is important to remember that patient engagement goes beyond simply providing access to data. It needs to provide access to user-friendly data in conjunction with the tools and resources that make that data come alive. Next slide, please.

While there is a laundry list of challenges that we face with interoperability and information blocking, I want to focus on the biggest elephant in the room which is accessing and aggregating data from clinical systems into a destination of choice. MU2's VDT has proved to be a big challenge for providers and quite frankly, I'm at a point that I'm not interested in 5% or the one patient that we have succumbed to this year.

I'm more interested in 100% access to that data so that stakeholders within and outside the Meaningful Use Program, like the research networks and precision medicine folks, can seamlessly access the data and automate it to flow into environments conducive of their needs. These are going to be the groups who really show us the value of engaging patients and they want and need the data. It is our responsibility to lay the framework so enable this flow of data.

One of our clients, the Immune Deficiency Foundation was recognized by the White House as a champion for change in precision medicine. Unfortunately, because of all of the challenges getting data from EHRs and provider organizations in a usable format, they are frustrated and timelines have been significantly delayed. How can we ask patients to become active participants and begin to aggregate all of their data when we know the user experience is subpar. This is simply not acceptable and we must do better.

The gaps that exist to get data outside of clinical systems to third party applications are partially policy related, but the culture shift we are undergoing is a major factor hindering consumer access to data. Some problems that we've faced to date in include the "T" in VDT does not work for patients in most cases. Organizations are simply turning off transmit and/or hiding it. Whether we use Direct messaging, APIS or a combination of both, the overarching issue of established trust connections still exists. The lack

of widely adopted trust frameworks between provider organizations and consumer facing applications are a major barrier. Directories to find providers that use Direct and are connected to patient bundles do not exist.

Some of the things we have done to help consumers find their health data is we've joined the consumer facing trust bundles on the market. We have provided guiding text to help patients find their data and directed them to different resources. And we enable our users to generate CDA documents that can be viewed, downloaded or transmitted in both human readable and machine readable formats.

The key is where we're going next. So the points I want to bring up are that EMR technology should be able to accept direct communications from patients and VDT should truly become view, download transmit and receive. Healthcare organizations and EMR vendors need to support patient trust bundles and patient trust bundles used in such scenarios should include options for automated online identity verification instead of requiring patients to use cumbersome in-person visits. Create…and we must create an ecosystem or marketplace where a consumer can easily find all of his or her information using the tools of his or her choice and establish connections to automate the flow of data from the clinical system to those applications. Thank you very much.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thanks Christina. Steven Lane?

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
Hello there. Good morning. Thanks so much for the opportunity to speak to the group. I am going to sort of turn the question a little bit on its head and kind of start with our successes. And then outline two key challenges.

For those of you who don't know me, I'm a clinician, I'm a family doctor, work in California and I work within an organization called Sutter Health, a very big, integrated organization mostly across Northern California. And I've had the chance to work on HIE for the last five years or so, in our state, and have really just had a wonderful time, have met marvelous people and we've had some great successes.

California is a state that's had HIEs up and running for as many as 25 years. Because of our preponderance of EPIC organizations, we've got 25 in our state; we've been able to leverage some vendor-specific solutions, many of us for over five years. But we've also leveraged the eHealth Exchange very heavily. Dignity health is a large organization. We've got three regional HIEs. The government agencies as well as a number of other folks in the community that leveraged the eHealth exchange.

And what I've found through this effort is that really HIE is a team sport; it really requires tremendous collaboration, which we've done in California. We have statewide meetings, regional meetings; I publish a quarterly newsletter and then a lot of very specific networking. You know, you really need to build relationships, make friends, understand each other's needs and perspectives. We certainly found that HIPPA provides a very, there are inconsistent interpretations.

So, getting together what we've been able to do is automate patient queries across our state to remove authorization requirements. We also share configurations of our systems, we share performance data and best practices and we've also sponsored some inter-vendor collaborations between EPIC, Cerner,

athena, the VA, most recently Netsmart. We've worked on specific problems and really gotten the vendors to understand our needs and start to evolve their products.

At Sutter we've got the majority of our active patients with chart linkages; we run 5 million patient queries a month and create 100,000 new linkages every month. We've exchanged a tremendous number of records, 12 million last year alone and the majority of patients that I see in the office and that our providers see in the hospital do have information from outside organizations available. We've also leveraged Direct very heavily and have seen some uptake of that.

On the next slide, I jump into some of the problems that we have. The first one really being that since we've been so successful in exchanging data, we're now drowning in data. We…I've heard from providers, too much information. We have transitions of care information coming, event notifications, lots of discrete data that we've pulled out of C-CDAs that we've received and then that data needs to be reconciled with the local record.

There are problems of duplicative data and clinicians are really feeling the strain. Currently in our system and in others, external data is kept separate from the locally-sourced data and we have data to show that people actually don't look at that information because it doesn't fit into the flow when they're taking care of patients.

Information reconciliation, problems, meds, allergies; very challenging and here again we have data that shows that it's the minority of time that that data is being reconciled in real time as people are being seen. So what we're after is really getting the right data in front of the right user at the right time in the right format, and with the right underlying functionality. So I think we…our real needs in terms of more discrete data access, more types of data, labs, procedures, immunizations, care gaps, but we really need the vendors to prepare the data, to collect it and clean it and consolidate it so that providers can go through it more quickly.

On the next slide I'll talk a little bit about clinical messaging. As I said, we've leveraged Direct very extensively, but it's all been the automated MU2 messaging and what's missing is the bidirectional messaging, the ability for a provider to send information to another provider of care. And I think that there are real opportunities. I know my time is running low...

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

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
…but, there are real opportunities for us to encourage the vendors to have standard and complete messaging functionality that will allow us as we use clinical messaging as we use e-mail today. We also need operational standards on the part of the providers and other users so that they know what to do with the messages. So I think there are real opportunities here to improve standards to support these two critical use cases.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you, Steven. Hopefully you can share a little more as we get into our questions.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
You know I love to talk.

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

Anna McCollister-Slipp – Co-Founder – Galileo Analytics
Hi there, how are you?

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Good thank you.

Anna McCollister-Slipp – Co-Founder – Galileo Analytics
So, just a heads up to whoever is operating the slides, there are a couple of places where there are builds, so I'll have to kind of walk you through that. Thank you so much for asking me to join you. My name is Anna McCollister-Slipp and I'm Co-Founder of Galileo Analytics. And I am speaking today actually as somebody who got into the health information technology business as a frustrated patient. I started my career in public affairs, economic policy, foreign policy, and over time as my type I diabetes progressed and I developed complications, I switched gears, got into health care.

And over frustration with outcome measures and sort of the paucity of adequate outcome measures and the potential danger for poorly designed outcome measures, in terms of unintended consequences, I got into health IT and co-founded a company focused on making research easier to do and more accessible to a lot of different people. And I'd like to walk you through why that's important and sort of quickly give you the dilemma that I've experienced.

So as I said, I'm now in health IT and after spending about10 minutes in health IT, I realized that many of the challenges that I and many like me face as patients, from a technological perspective, are very easy to solve. It was…it's not an issue of the technology not being ready, it's an issue of there being a political will and a societal will to consider it an urgent matter.

So the slide that you're looking at now is what I like to call it's sort of a description of the math that's constantly going through my head in type I diabetes. And a lot of people don't realize this, but with type I diabetes you're dosing yourself 24 hours a day with a potentially fatal drug and one in 20 people with type 1 die from insulin overdose, even though you can do everything right, the way your body reacts to stuff changes.

So, I've had the disease for 30 years. I have lots of glycemic variability; as a result, I have complications from the disease, several co-morbid conditions that come along with it. I take…to treat the diabetes and the complications, I take 15 different medications; I use eight different devices, two of which are attached to my body 24/7. Others, you know some are specific to diabetes, some give me critical information about the complications associated with diabetes such as kidney disease, kidney functioning. I have 13 different physicians, 12 of whom are specialists and the last time I counted, which

I believe was 2014, I had 63 different doctor's appointments. Think about what that means, that's more than once a week.

Now at the same time, in the midst of all of that, I have this constant algorithm going through my mind of where my blood sugar is, where it's been, where it's going. How much insulin do I have on board? How much insulin do I need? How many carbohydrates did I eat at breakfast? Did I eat breakfast? Did I exercise today or did I exercise yesterday? And if so, what kind exercise was that? Because that will determine when my body starts replenishing the muscle and have a significant impact with glucose and have a significant impact on what my current glucose level is.

All of this, you know am I going to take…do I have another meeting this afternoon? Is it going to be stressful? Am I going to walk or am I going to take a cab? All of this is constantly going through the back of your mind. I mean a lot of it actually is quantifiable in data form and in many cases we have that data quantified, structured data. But because it's not interoperable, because you can't access it because you can't combine it with any of the data from the other sources that I have on this screen, it's left to the patients to constantly calculate these algorithms, these equations in our head.

Some of us get it wrong; even though we do the same thing day after day, the way our bodies use insulin changes. So despite all of this complexity, and the world of data we live in, all of our outcomes measures, all of our access to drugs and devices that are critical to our care are determined by something called hemoglobin A1c, which is a biomarker and represents your blood sugar level over a three month period, which is a little bit like using your farmer's market…farmer's almanac to plan your afternoon. It's completely inconsequential, completely irrelevant to the vast majority of things that we have to deal with. And again, the reason why hemoglobin A1c is the standard is because getting access to the data is nearly impossible.

Next slide. So this is sort of the example of the types of devices that we use. I have a blood glucose monitor, I have the insulin pump, blood pressure monitor, digital scale, a computerless glucose monitor, an Apple watch which tracks a variety of different data related to exercise, sleep, other things. In addition I have to get my labs through this lab test portal, and I have three different patient portals from three different providers. And that's just because I concentrate all my providers in mostly one hospital.

That combined with the algorithm, this is a lot of data, most of which, actually all of this data is structured machine readable data, but none of it can be combined, and none of it can be used or calculated in a way that keeps me and other patients safe. And there are very real consequences. Next slide, please.

In addition to not being able to manage my health, one of the things that really concerns me is the fact that the majority of the failures of these devices I've just talked about are not reportable. There's no way for FDA to actually do…to fulfill their mandate for preserving public health and protecting patients, because they can't collect the data related to failures. And I won't get into specifics of this, but it's a very real consequence and again, people are dying because these machines, these devices when they fail, it's not reportable and it's completely off the radar of public health officials. Next.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Anna, could you please work on wrapping up.

Anna McCollister-Slipp – Co-Founder – Galileo Analytics
Next please. So what's the big deal? Again, patients disengage, they burnout, we give up, physicians make mistakes, quality of care is compromise, it's not improved, we can't do any research with any of this data that all of us generate on an outpatient basis. It's a huge loss, a wasted resource that's going nowhere that could help all of us improve our understanding of disease and care. Device failures go unreported and again, people are dying, literally dying. Next. Next slide.

So I really think it's a moral imperative that we solve this interoperability problem. Getting there eventually is completely inexcusable at this point in our technological development. It's doable now; we have to do it now. The need for this task force, for the ONC, for everybody involved to understand that this is a moral imperative, develop a sense of urgency. And image files and PDFs won't work, we have to have machine-readable, structured data sets and I believe it's within the government's purview as…to protect public health and to keep patients safe, that we need to mandate access to open APIs or open data streams. Again, it's doable now, there's a moral imperative and a true sense of urgency. Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thanks, Anna. Edwin?

Edwin Miller – Chief Technology Officer – Aledade, Inc.
Awesome. Hi, this is Edwin. I am the CTOF at Aledade; you can go ahead to the first slide. Thank you for having me this morning. So just a little bit of background, for 10 seconds; Aledade was founded in mid-2014 basically to help primary care docs that are staying independent, and want to stay independent form and participate in value-based care. We formed…initially Medicare Shared Savings Program ACOs and we started with three in 2015 and then added five more in 2016. We are in 11 states with about 115 practices, with roughly 100K Medicare beneficiaries. So we're kind of at the front end of the land war of practice transformation from fee-for-service to value-based care.

To go quickly, our strategy was to allow, really allow practices to use whatever EHR they started with and not try to push them toward a preferred list of vendors. So we find ourselves today with a mix of about 30 EHRs across all of our practices. Virtually everything we do related to practice transformation and population health requires timely, accurate and complete data, both at the…from the practice's systems and from community resources like HIEs or hospitals or health systems.

This situation is not at all unique to us, every…with the shift…with the MACRA shift and the shift to participation by ambulatory practice to value-based programs by 2018 and 19, the…in my view, is completely unprepared on every level for this change. But we can talk about the interoperability parts of that here. Go ahead to the next slide.

So in terms of challenges we see, I would start with the EHRs themselves. As former regulators and EHR developers we were, I would say unpleasantly surprised is putting it mildly, at the lack of compliance around the data portability certification criteria, so. And the stuff I'm going to talk about here is not super advanced and, you know, like this is the basics.

But we found that only 38% of the systems in our mix at least of practices could perform a single click export of C-CDA documents. And so we were using this to build our data warehouse at the ACO level to

do population health. Issues ranged from vendors passing the certification by just manually exporting five patients and then getting the checkbox, but then not being able to efficiently export thousands of patients. So the feature actually being in the product, but out in the field having…being buggy or having known defects that kept it from actually working in the field.

So, and not surprisingly, vendors are more than happy to overcome these barriers at additional cost both to the providers or this gets passed through to us. And they do this through custom interface feeds or even worse, through what I would call proprietary pop health platforms where they want to own or monetize the data exchange through closed models.

The second big issue is around sort of the C-CDA and data quality reporting issues and the core…you know, so C-CDA implementations are variable, as everyone knows. The core date of like problem list, medications, allergies, vitals, immunizations things like that are pretty readily available, but once you get beyond that, the data's highly variable, if it exists at all. We have had to route around this through proprietary data extractions and normal basic technology, so this is kind of considerable time and expense.

Even after all this time and expense, for the last…for the 2015 GPRO recording cycle, we were only able to populate about 30…prepopulate 30% of the data elements from electronic data, which meant that the practice had to be chart reviewed and manually pulled the rest. So after all of that time and money that was painful. There's also a big disconnect in the work…between the workflow, the data capture workflow and the quality measure output. So knowing what you have to do in the technology to…(Indiscernible,static)

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Edwin, we can't hear you anymore.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
Oh, I'm sorry…there?

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
It's a little better. Did we lose Edwin?

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
No, I can't hear him at all.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Umm, well hopefully he'll call back in. But until then, it sounds like…Edwin just messaged that he's here, but we can't hear him. So Edwin, maybe you could call back in, maybe if you're on a cell phone, go closer to a window or something. But while we wait for Edwin to return, let's go to the task force members and open up for questions to the panelists.

Thank you again to all of our panelists, hopefully we get Edwin back. And so we already have a couple of questions in the queue, so just a reminder, if you have a question, please raise your hand using the hand-raising feature and we'll put you in the queue. The first person with a question is Jorge Ferrer.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Hi, Michelle, thank you. I have a question for Steve. Steve, you mentioned that data needs to be reconciled at the point of service using the term information reconciliation and you also implied that you need to reduce the cognitive burden of the recipient clinician. Are you suggesting that the data receive needs to be integrated with the use of interface of the clinical application in use? If you can expand a little bit on that I would appreciate it.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
Yeah, I think it's a real challenge and we've worked closely with our vendor on this. And the problem is, you don't want to necessarily bring the data in unwashed. I see patients; they've got say connections with four other organizations, each of which kind of has a very similar medication list. I don't want to create duplicates, you know sometimes the dose is different, the preparation is different. The same could be said for the problem list of the allergies, as I'm sure you know.

So there needs to be clinical review of that data before it's brought into the local curated medical record. But I think just posting it and saying, you know do you want this? Do you not want this? Is it the same or different? That's not really enough. We need to combine like things. We need to have some intelligence in the machine to prepare that data so that then when the clinician looks at it, she can understand, you know what are the similarities, what are the differences much more quickly than today. Today the burden of reconciling outside data when you have a lot of data, the way that we do, is so much that most providers just as we've shown, just don't do it and that's obviously not the goal.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Thank you.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
This is Edwin, I'm back.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
Was there more there Jorge?

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Yeah, I was going to say, so your recommendation is that we remove some of the reconciliation effort on the clinician so that the data is served up in a more cognitive fashion.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
I think that's a good summary. There's obviously a lot of complex technology behind that, but I think from the clinicians' perspective, that's the desire.

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Michelle, can I follow up on that one?

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
I think I will let Edwin just finish up his remarks and then we'll go back to questions.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
I apologize for that.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Umm, unless it's…is it related or…

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Actually my question to Steve is exactly just a follow-up to what he just said.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay, go ahead.

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Okay, this is Larry Garber, I'll be quick, Steve, thank you. So when you talked about the reconciliation of the data there are some types of data that I'm wondering if you are loading them in without manually touching them, such as notes, such as test results, perhaps immunizations, where you just remove duplicates?

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
Yeah Larry, so you and I use the same system so I think you're well aware of the capability, but certainly notes and results, I think can come in unwashed if you will. I think it's the discrete data that you're bringing in to the locally curated record where that needs to be checked. Immunizations, we recently implemented the ability to reconcile outside immunizations just a couple of weeks ago and I've been doing that, and you can't just bring them in because what you find is that the patient told this organization that they got it September 1, and they told me they got September 15, and they're really the same thing. So…and I don't know that there's any way to write rules to actually do the work. I think what we need to do is look at the data, have rules that identify the things that are likely to be the same or different, lump them together, and then make it easy for clinicians to make decisions with a single click.

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you. Okay, so we'll go back to Edwin, let him finish his remarks, and then we'll go back and open up to questions.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
I apologize for that, can you hear me now?

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
We can hear you, thank you.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
I was on slide two, I think…one more. So umm, I…so let's see. So I could probably jump ahead at least, you know, so for the quality reporting I think there's just a disconnect between the data entry and data capture workflow and knowledge of that and the actual quality measure itself. I think that's technically not an interoperability problem, but I don't think it's useful to isolate the data exchange from the UX that's behind it to actually drive the data moving from one place to another.

And in ter…and then finally with HIEs, this is a huge area for value-based care. It's critical to have visibility to patient transitions of care in the community. We focus on this heavily and found a lot of issues, even in states where there was a pretty good, robust HIE where all hospitals were connected; we saw high variability in data quality matching issues and panel management accuracy. We did find that where there were panels, we did see much greater matching accuracy, as you would expect versus where the hospital just said, hey, this is a patient of Dr. So-and-so for example.

And so…and then finally on slide three, I phrased this mostly in terms of things that we see as needs. I'm happy to talk about some of the specific things that we may have done to; you know to solve some of these in the Q&A. Go to the next slide, sorry.

So obviously, you know we kind of felt like there should be better inspection and enforcement of, you know of the existing criteria for Meaningful Use. EHR certification testing has to get into the real world of production use. The disconnect between sanitary testing conditions and real-world experience is obvious and I think it blunts the value out in the field.

Working to address data blocking and governance issues, we see some of this in markets even where there is an HIE, but it should not cost a practice, you know thousands of dollars to get ADT alerts going to their community, especially after we've spent hundreds of millions on HIE infrastructure. We need…maybe one option; this is way beyond my pay grade but, would be to tie funding to the existence and availability of core infrastructure for data sharing.

So whether it's notifications or directories or whatnot, but, you know if you're getting paid by CMS and then practices who are trying to participate in these CMMI or value-based programs should have access to the data to make this thing work. Everyone is going to have this problem and it's not a proprietary issue. So there's a…we see a range of regulatory levers that could help with that.

There are still opportunities to standardize code sets, even things like disposition codes and things like that; sometimes they have standards, they may not always be followed. The variability in messaging and so on could continue to be harmonized and fixed.

And then again we could see a better focus on the link between EHR workflow and UX with quality measures and better harmonization between the data formats so that C-CDA and things like that…or make it easier to map to get quality measure satisfied. So those were just a few thoughts. Thank you. Sorry for the interruption.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you, Edwin. Okay, back to the task force members for your questions. Larry Garber, you were the next in the queue; did you get your answered or do you have another question?

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
I have tons of questions. I will allow somebody else to go next and I'll re-raise my hand.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay. Larry Wolf? Larry, if you're talking, we can't hear you.

Larry Wolf, MS – Principal – Strategic Health Network
Sorry, it took me a minute to get off mute.

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

Larry Wolf, MS – Principal – Strategic Health Network
…get off mute. So I'm hearing some themes here about need to establish trust, trust in the data, trust in the source, sorting out issues of data sets and how much automation we're willing to bring into the picture, really in some ways a big cultural shift. So, I guess I have sort of a two-part question. So the first half is, is there some less is more opportunities here? Are there some simple things that would be highly valuable like simply knowing where a patients been getting their care? Who are the other providers that they've been getting care from? At…so just like a baseline of what's the universe; so if an individual provider's involved in their care, they have some simple way to see who else is engaged.

And then the second one is really heading towards a topic that Jorge and Steve and Larry Garber were talking about which is, if people could expand on the possible role of increased automation to do…to make a first pass or a second pass at trying to clean up the data and presenting it in a way that the strengths and limits of that cleanup are visible. But to really facilitate the reconciliation process because I understand where that, in and of itself, is becoming a huge burden and a barrier to doing anything with the data. So two halves, less is more and then where are we on a push to deeper integration? And that's really open to all the panelists because they all seemed to speak to those things.

Anna McCollister-Slipp – Co-Founder – Galileo Analytics
Hi, this is Anna McCollister-Slipp and I mean I'm not a clinician, I don't have to interface on a regular basis with an EHR but I would say that as somebody who's a health IT entrepreneur and who works and interacts with a lot of health IT entrepreneurs, one of the biggest issues is that they can't…there's no way for them to be able to access the data streams. There's no way for a patient to be able to assign access to a structured data stream to entrepreneurs.

So, you know I'm not going to pretend to understand the dynamics of data curation before it hits the EHR and some sort of clinical decision support but I think there's a lot of ingenuity in the community that's latent because the raw materials that these entrepreneurs need are not accessible. And those raw materials are structured data streams, which is why I think sort of the least common denominator

variable that there's no excuse for us to continue to tolerate is a lack of access to these data streams. And it's doable; it's not that expensive relative to the cost of other things. I think anybody who has data that is relevant to what's happening in the clinical setting or the patient setting needs to be required to have an open API and to make that data available. And I think, you know there are a lot of really smart people out there if the vendors, if these entrepreneurs and you know, data scientists, computer scientists can get access to the data streams, they could probably come up with ways to curate the data automatically that might work great for some uses and help us get there faster.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
Hi, this is Edwin. I would echo your sentiment that there's definitely less is more here. I think we get too infatuated with large solutions and, yeah the very concept of knowing where are my patients is a huge question and the only way we have to answer that today in our world is through claims, which are 90 days old.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
And this is Steven Lane, I think the less is more concept is really interesting because again, once we opened up the spigot and we started pulling in all of this data and giving it to our providers that that was the first thing that we heard. But as a primary care doc, you know I'm responsible for all of it as I would be if I were a hospitalist or a care manager and it's hard to know how to filter it. I think that if you're specialist, if you're an endocrinologist taking care of diabetics, we can put together a filtered view.

But it's a real challenge. We've got, on the one hand we want more data, more structured data, on the other hand, we have human beings that need to be able to respond that data. So I agree we do want more structured data. But again, one of my foci here is really on that filtering, that preparation, putting energy from the federal level into tools that will do that for the end-user so that the data can actually be digested.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Michelle, can I ask a question regarding that statement?

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
Sure.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Steve, this is Jorge from the VA; it is, what is your impression regarding the clinical nuance and the what used to be very thoughtful narrative on the patient's story. Do you feel today that we've lost some of that? Or do you think the notes that are coming are, you know, they may or may not be verbose, but they may not have a clinical sort of exquisite details that are required for clinical care? Can you comment on that?

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
I'd be happy to and Jorge, we should have dinner sometime and talk about that because, I'm pers…my notes personally are very telegraphic. I think that clinical nuance is lovely, but I don't think people want to read it. People want to get to the core; they want to get to those diabetes metrics. I think that when you're seeing back your own patient, you need to understand that clinical nuance, but I think it's rare that that really impacts the care provided by the next provider in line. So I think discrete data gets us

95% of the way that we need to provide really safe, high quality care. And I think the clinical nuance that we used to have in unreadable handwritten notes is nice to have.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Thank you.

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

Christina Caraballo, MBA – Senior Healthcare Strategist – Get Real Health
This is Christina…

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical group
Michelle, this is Larry, can I just quick ask a follow-up to that?

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

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
So Edwin, do any the Consolidated CDAs that were sent, do any of them have notes in them?

Edwin Miller – Chief Technology Officer – Aledade, Inc.
Um, some of them do, but, you know it's free text. And so for something like…some of the…a lot of the data that you need for quality measures can be templated, like falls risk assessment, for example. And so knowing where, you know each implementation even of the same EHR is going to have different locations for different fields that would then map back to that quality measure.

Christina Caraballo, MBA – Senior Healthcare Strategist – Get Real Health
This is Christina from Get Real…

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
And don't get me wrong, I didn't mean to say that free text notes were not worth sending or receiving, I just don't think that they end up being used, and we have data to show that they don't end up being used as much as the discrete data. Sorry.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
I would agree with that. We've been skeptical of trying to do anything with natural language processing or other techniques to try to deal with that data. You have to have a pretty controlled environment to do that well, at least in our view.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Christina, did you have a comment?

Christina Caraballo, MBA – Senior Healthcare Strategist – Get Real Health

Yes, thank you. I just wanted to chime in on the C-CCA's which have been a major barrier for us and a huge problem. Most of them in production are not passing the NIST transport testing tool when we actually test them to come into our system. And one of the problems we've found is that they have…a lot of EHR vendors have built their C-CDAs to go directly to the patient portal that's tethered to them instead of outside and it becomes a huge barrier when sending out.

We've experienced significant cost, like upwards of $30,000 just to get connectors for the EHR vendors to turn on this capability and we've had to come up with a lot of workarounds to create C-CDAs on our own, just in order to continue to move forward with our projects. So that has been a huge barrier.

We've also had problems when we look at more complex C-CDAs when we're trying to pull them into our systems. It seems like the easy ones or simple ones come in very nicely, but the ones with more complex problems are very long and often hard to read. So I wanted to add that about the C-CDAs.

And then when we're looking, as Anna mentioned, on this open APIs, it's really important to remember that whether we support Direct or APIs and I'm of the belief that we should support both and all of the emerging standards to get data out and into applications, we have to remember without those trusted connections established, then there's nowhere for the data to go, no matter how much technology we have. So what we really need to do is come to an agreement between the hospital organizations and EHRs and those consumer-facing applications and patient communities on the big thing we're looking at is the LOA between…the level of authorization, Level 1 or Level 3 seems to be a huge barrier and I think that's a topic that really needs to be discussed where stakeholders agree and don't feel like they're putting themselves at risk to send data to patients so they can start using it.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay, back to Jitin.

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
Thank you. So this question's actually for all four, but you might…you probably will answer it a little differently from different points of view here. I'd like to understand, you know having seen interoperability in the wild as well, I've noticed that in certainly situations where a patient or a provider would actually, you know need the data to take…in the course of taking care of, you know that specific patient and a lot of times when they don't.

I'm try…I'd love to understand from all of you, you know where is…what are some of those circumstances and where's there just a psychographic rift between a provider who should have been asking for data and they didn't or a patient who should have been asking for data and they didn't because, you know, they just assumed that they couldn't get it. I'd love to understand, you know where that is. We've made an assumption for a long time in industry that patients don't engage. We made a long te…an assumption for a long time of crossing the street that providers actually don't engage and it's useful for this committee, I think, for both committees probably, maybe more so the Policy Committee, to understand how that is changing, especially over the last few years.

Edwin Miller – Chief Technology Officer – Aledade, Inc.
Well, this is Edwin, I mean; I think it's just a matter of incentives. I probably can't speak as much to the patient side, but on the provider side, there's going to be a sea change in the next couple of years as we

get to 2018 and every practice, everybody's going to…is either going to participate in these programs or they're going to end up changing their model. And so, they're all going to need…they're going to be suddenly asking the question of, how can I get this data because they're going to need it to participate in these risk programs. So I think…I just think it's a shifting incentive and we're probably at the front end of it.

Anna McCollister-Slipp – Co-Founder – Galileo Analytics

This is Anna McCollister-Slipp and again I'm speaking from the perspective of a patient who's morphed into a nerd, excuse me, although I've been a nerd for quite some time. But if you think about, and there are 15 different medications you know, 12 of those I take every day to require, you know precertification with lots of labs and lots of data, a separate portal for my labs, different applications or Apps on my iPhone to get different things, all of the different devices or the data streams that I need to coordinate, which I still cannot get access to; I still can't see all of my device data in a single place. All this stuff is critical.

And usually, again my experience is mostly within the type I community, but other communities as well, is that when people are first diagnosed, you know they're overwhelmed and they get engaged and they try to figure it out. If you're constantly faced with a brick wall, you give up and you disengage because there are so many other things you need to worry about. Even for people who had disease for a while and, you know they kind of understand it and again I'm…about chronic disease here that's mostly managed on an outpatient level. If, you know, if getting access to something is so difficult you just don't do it. So for instance, the last time I tried to download all of my pump data, my insulin pump data, my CGM data, my blood glucose meter data, seven hours later I gave up. So, that to me is just not acceptable.

And, you know lot of people like to say that patients don't engage, they're not informed, they don't understand these things; well, if you're constantly speaking in a different language and you don't give people the tools they need to be able to engage, then they're not going to engage. And, you know, because type I is such a data-focused disease, because we have all these tools, people are far more engaged than perhaps some of the other diseases where you don't have the ability to use so many centers and tools and you don't have the risk of dying from small mistake of your dosing.

And it's still incredibly, incredibly difficult. I mean within our community we've launched a movement called the, "We are not Waiting Movement," for patients and parents of patients and just started hacking into things; hacking into the data streams, you know, finding ways to do it, and you know, it's completely outside of the context of regulation, it's completely against the protocols and the tools that the companies provide but they're doing it because that's what they need to do to survive and to keep their kids or themselves healthy.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health

This is Steven Lane; I'd like to offer a somewhat different perspective. I think it was very interesting the way you said the psychographic rift. You know, similar to the early days of EHR where we went from assuming that we didn't have access to data to assuming that we do have access to data, at least from within our local practice. I think again over the last five years of doing this work, in our organization we've made a similar shift where there is an assumption that you have access to data and unfortunately it's not always a fair assumption because the access to data is based on the configuration and the policies of the sending organization as well as the receiving organization; so it's quite variable.

But I find that my patients now come in with an assumption that I do have the data, that I do know what's happened to them at Kaiser or at Stanford or at UCSF or someplace like that, and sometimes it's the case and sometimes it isn't. And I think it also happens within the provider world that once you give a provider an electronic tool to help them do their practice, they assume that it's there, you know whether it's an immunization alert or a drug interaction alert, and they stop using their old systems. So I think that we're going to be in an awkward period here where some data flows and some data doesn't.

I think the long-term goal, from my perspective as a clinician is when I walk into the room that I have all of the data and I have it formatted in a way that I can use it to make the same kind of decisions that I made back when I was just looking at a paper chart. But I think that there's going to be a dissonance here.

The other thing that I've heard from providers which is a bit of a resistance to this is the concern that well if the data's available, then am I responsible for it? Am I liable for some snippet of data, not only in my own massive EHR, but in all of these connected the EHRs that…and if I miss it, will I get sued essentially or will I do something , you know not right for my patient. And I think there again, the imperative of being able to see the outside data in a way that is actionable clinically is so important.

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
Michelle, do we have time for me to do a…be a follow-up question to Steve? I know our time has gotten skewed a bit because we got a late start.

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

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
So a really quick question; you said Steven that the organization paradigm has shifted, how do you know it's shifted? How did you manage to shift it? It's not too hard for a single person and, you know people directly around in a shift, it's really hard to get an organization and all its doctors to shift. I just love to understand, you know what…how did you guys go about enabling that, what's really a fundamental cultural change?

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
Well, what we've done in our region is really try to point out the benefits to the patients, point out the tremendous opportunity to improve patient safety and to improve efficiency. I think, you know there's a little bit of data out there in the literature about lower rates of advanced imaging, some lower rates of drug interactions when you get access to the data. But when you talk to clinicians, they understand that they can provide better care if they have access to the entire patient record. So, I think that's really been driving it. And as I said earlier, building relationships of trust between the organizations to help competitors understand that we're really collaborators.

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
Terrific; thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
So we do have two more questions in the queue, if we can have them be very quick, we can…and then we can move on to our next panel, that would be appreciated. Larry Garber, he didn't get to ask a second question and then after Larry we have Anjum.

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Thank you so much. This is particularly important because we have consumer advocates on this panel, what are the things in order connect to your records, to your home devices, we need to be able to authenticate you so that my, I'm a physician so that my electronic health record knows that I'm communicating specifically with you or your device, as a patient…as a consumer as a patient. And so I have a rule of thumb is that, I don't want to authenticate you if I can be fooled by a mother of an 18-year-old daughter or a spouse; so what recommendation do you recommend for authenticating and validating that you indeed are the person that I'm messaging?

Anna McCollister-Slipp – Co-Founder – Galileo Analytics
Well, again, I mean, I sort of dabble in the health IT world, but I'm not a programmer, I'm not an expert so I'm not going to pretend to understand the specifics behind them, but I do know that other platforms in the consumer space have figured this out, you know Facebook, Twitter, they allow you to use OAuth as a very simple way to validating whether or not the person that says they are, you know whether or not the person is who they are. So it's doable, I mean I know a couple of different people who have companies that do this kind of thing specifically for healthcare. You know, if you're interested I can give you the names of those off-line but it's doable.

And again, we have lots of examples in the consumer space to be able to make this work relatively easily and these are existing platforms, existing tools. You know, the specific one that most of the consumer ones use is OAuth. I know people who are technical experts, programmers in the healthcare space that say that OAuth would work perfectly if we had open APIs and access to APIs.

Christina Caraballo, MBA – Senior Healthcare Strategist – Get Real Health
And this is Christina. I'll add that it's very important to source all of…where all the data is coming from and I think that'll be the key as we move forward, to help protect providers. We don't need it to all go into the EHR right away as a first step; I think it's important to provide patients with the tools to better engage with their healthcare. It doesn't mean that you have to make all of that data immediately flow into the EHR system; it just has to be there so that the people can start engaging. If they can track things at home, then when they come to their provider's office they can have a more informed discussion on their health in a longitudinal way as opposed to forgetting about things that happened over the past week. So sourcing it is, I think, extremely important.

Anna McCollister-Slipp – Co-Founder – Galileo Analytics
I think that's critical and again, you know to the earlier comment about doing small things first and starting small and moving to big, I think again, not to beat a dead horse but, open APIs is very easy, least common denominator solution that will enable patients to able to access the data in a structured format and then, you know to be able to send that data to their physician, to be able to give physicians access to patient level program that they use if the physician can or has time to do that.

Right now the fact that we don't have open APIs prevents a lot of important things from happening, you know starting with patient engagement, patient ability to be able to understand their health and be able to care for themselves better. Physicians' ability to understand what's happening in the outpatient setting, you know the FDA's ability to truly monitor device safety and device stability and accuracy to what we're trying to do with the Precision Medicine Initiative where patients would be able to donate their data to research. None of that is doable unless we have open APIs.

So…and again, if this were 10 years ago, maybe even five years ago that would be a little bit more difficult to do. But it's not at this point in our technological developments so I see no excuse for not making that happen.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Anjum, very quickly.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Thank you; this is Anjum Khurshid. So one of the use cases we have been looking at in terms of interoperability experience relates to population health, and Edwin mentioned in his presentation I think cost being an issue in terms of, you know of getting access to that data. So my question was whether that cost is mainly something that can be resolved by vendors or is it by healthcare providers or data owners or is it a bigger issue in terms of addressing that which may be a barrier to the use of data for population health?

Edwin Miller – Chief Technology Officer – Aledade, Inc.
Well…this is Edwin. Even with the HIEs, the cost that we see for that, most of the costs are just passed through the vendors charging them quite a bit, you know like a per patient per month sort of model. Yeah, certainly, you know what we've seen on the EHR side for ambulatory vendors has been, I don't know predatory; I mean, it's a…you can see in my slides, I mean it was…it's a significant cost and providers aren't in a position to fund it typically, at least small ambulatory practices.

So I don't know, I mean, you know the question of who pays, I think is an interesting one and, you know the cost could be reduced by, you know thinking platforms, thinking APIs, and stuff like that. But even the cloud vendors, which are certainly much more efficient to do…to technically to get interfaces going where we could, like as an ACO we could make a single connection to a cloud-based vendor, the upfront cost for that are very significant in a lot of cases. And to the point that even, like if we just have a few physicians on a specific product, amortizing that over just a small number of practice doesn't make sense.

Steven Lane, MD, MPH, FAAFP – EHR Ambulatory Physician Director – Sutter Health
And this is Steven Lane; I would argue that cost is a surmountable barrier. I think…we haven't talked about it, but I think the Carequality Framework provides a tremendous opportunity for all of us to start moving data at a much lower cost than the old big iron HIE models that we've utilized. And I think that once that really starts moving, we are going to see a lot of data moving much more quickly at a much lower cost.

My experience is that most of the vendors who are ready to go today are going to be offering this functionality at little or no cost to their existing customers. So I think that if the vendors continue to evolve their use of standards so that more of the discrete data can move between them, we will see a tremendous uptick over the next year or two through Carequality.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
That's great. Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
And thank you to everyone on Panel one; we greatly appreciate you taking the time to share your insights with us today. We are going to move on to Panel two. We do have a slight change on Panel two; so Panel two is also health IT…I'm sorry, is health IT stakeholders. We have Scott from Cerner, Lara from PatientPing, David Yak from Surescripts and replacing John we have Greg Carey from athenahealth. So I just want to make sure everyone is on, I should have asked as I said your names; Scott, are you there?

Scott Stuewe – Director, Cerner Network – Cerner Corporation
I am.

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

Lara Sinicropi-Yao – Co-Founder and Head of Product and Operations – PatientPing
I'm here.

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

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
I'm here.

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

Greg Carey – Technology Standards and Policy Manager - athenahealth
Yup, I'm here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Great. Okay, we'll get started with Scott and whenever you're ready Scott, please go ahead.

Scott Stuewe – Director, Cerner Network – Cerner Corporation

Sure, thanks very much for having me on and just quickly, go to the next slide. So I want to start sort of with what we see as some observations, I guess in the market. So first thing, echoing actually some of what was just said, query-based exchange is actually becoming an awful lot more of the norm. So query-based exchange based on XCA profile supported by CommonWell and Carequality in common, as well as a bunch of suppliers natively and getting that data in the native workflow is becoming the common capability in the marketplace, which is useful to us as we believe native workflow is essential for usability, and frankly built in as important from the standpoint of reducing costs. So it's just a part of the stack, kind make it much less costly and much easier to utilize.

The second trend on the good news side is that consent's getting easier as native workflows basically drive the notion that the users who are connected to a network all have treatment relationships with patients radically simplifies the question in terms that you might be able to quantify the DURSA, which, you know basically expects lots of different kinds of models, is 50 pages; the Carequality connection terms are eight pages, the CommonWell connection terms are four. So it's…as you get to the point where you can expect something about the use case, it changes what sort of obligations you have to place on participants.

The second thing is, as we get these kinds of exchanges available the tipping point for participation is arriving, so that we have on the CommonWell side lots and lots of people who are making those connections. And for Cerner clients, we are making other endpoints available or other endpoints are available for our clients by query-based exchange, EPIC, eClinicalWorks, and others that provide those capabilities.

So the other thing is that Direct, for…some other folks talked a little bit about Direct, I think that we're starting to see some value in pockets. I think the big…there's some variability in the way this has been implemented in systems so, as it is made available as a true replacement or analogous to e-mail that we all know and love, what's missing I think for a lot of people is a directory capability. And those directory capabilities, as they emerge, can have a huge impact on Direct's ability to make things work. Next slide.

So in terms of things we do see as challenges, and I think I've heard some other people say this as well, documents in the wild are sometimes just non-conformant with currently accepted standards and they in…particularly in the peer-to-peer world and with provider organizations or suppliers that are new to it, they rarely contain narrative because basically the facts on the ground are that people are doing what they are obligated to comply with in Meaningful Use and so the CCD template is frequently all that's available and so the story of the patient is missing.

And even in Stage 3 where you'll start having the discharge summary, if these documents are chapters in a book, if the patient's story is a book, then frankly the discharge summary is the last chapter, so that's kind of a missing element, if you will. If you're in long-term care for example, you need to have the ongoing story of the patient and no one would be obligated to share history and physical or progress notes, for example.

Second, variability of state-to-state requirements really drives a lot of cost for our clients. The facts that…on the ground are different state HIEs have different technical requirements and different obligations and difference is costly for all concerned, and so same is good, different is bad, I guess is what it amounts to. It's much better, although you do want to have people innovate, standards are important and it's useful if clients can use one thing. And then I think other people talked about the

future state and for some it is the current state where there's already an awful lot of data and that data is difficult to organize, and I think that's partly because of a document-oriented architecture. Next slide.

So things that have been working to solve these problems; first off, if you can get a group of suppliers together to facilitate collaboration, you can move forward to, you know in advance of the standards advancement and then…that doesn't mean we don't have high expectation for the Stage 3 Meaningful Use certification process, we're hoping that that raises the bar around conformance.

Secondly, I think to satisfy that second question, we as an organization look to try and create workflows that make the user experience reasonable, despite the fact that data might come from multiple sources. So we want to make sure that if data comes from the HIE and also from a national network, that that data is presented in one workflow, but at the same time, we are actively with our clients to try and influence state organizations to settle on standards-based document exchange, pretty much around Carequality Framework for exchange, XCA-based rather than XTSP.

And then last topic is related again to workflows. So, we can do some things with workflow as we get more and different document types. So if we get the seven document types that the Social Security Administration would like to have on every available encounter out there, it will mean a lot of documents are suddenly available, and making that usable to the end user is going to be a challenge.

Making that work in a way that clinicians can decode it can…maybe we can do some things within the constraints of a document- oriented architecture, but I think there's an expectation that as we work in an API level mode, we can be more specific about what we want, more specific about what date range it represents, more granular about how we mash that up and organize it in the user interface.

So there's, I think, while we do believe there is going to be some substantial capabilities that we will want to offer our clients in the document exchange space, we are excited to move towards API as fast as is reasonable. So working with both industry organizations as well as individual suppliers, we are actively working to try and address the variability we see in the available documents by asking for exactly what we want in an API instead of taking what we can get in a huge payload that is sometimes poorly organized. Thanks very much.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you, Scott. Lara?

Lara Sinicropi-Yao – Co-Founder and Head of Product and Operations – PatientPing
Hi, good morning; my name is Lara Sinicropi-Yao. I'm a cofounder and a COO of Patient-Ping. Thank you for the opportunity to speak with you today; it's a privilege to be able to share of views on this most important subject.

At PatientPing interoperability is at the core of what we do. Our mission is to help transform our country's healthcare system to be the highest quality and lowest cost by empowering providers to more seamlessly coordinate care with one another. We do this by providing real-time notifications to providers when their patients receive care anywhere. Next slide.

In partnering with providers across the whole care continuum, including acute, post-acute, long-term care and community based providers; we find that there are three consistent interoperability challenges. The first is that legacy IT infrastructure and clinical workflows do not assume interoperability. Our existing IT infrastructure was adopted and implemented in silos without requirements for interoperability in place.

As interoperability efforts have evolved, many emergent solutions are focused on passing through or simply routing data into already crowded provider interfaces, as opposed to intelligently aggregating and harmonizing data from multiple systems so that it can be easily consumed into provider workflows. Take for example ADT notifications and Direct. If we were to simply route ADT messages into systems and pass it through to existing Direct messaging…we could say we've achieved system interoperability.

But I would argue that this comes at the cost of the provider user whom we've inevitably over-flooded with a tangle of individual messages, which they then have to read, contextualize and sequence in order to determine what action they should take. This ultimately negates the value of inter-system connectivity. True interoperability entails more than the ability to just share the data, the real value comes in actually using that exchanged data to drive better patient outcomes.

The second challenge is that there's a lack of complete financial incentives to engage providers and advance interoperability. Much progress has been made to move toward value-based care and engage providers to enhance quality of care for their patients, but there's still room for improvement. Due to conflicting incentive design across care models and payers, many providers are left with one foot in volume-based care and the other in value-based care.

In addition, there continues to be an emphasis on process versus outcome based performance metrics among many value-based programs. With more value-based programs being launched, some with overlapping, and other non-overlapping metrics, providers are left often confused and distracted, focused on checking requirement boxes versus on what really matters, delivering higher value care to their patients.

And the third challenges is that provides have limited access to real-time, actionable information about when and where their patients receive care. Provides often rely on claims data to understand their patient's utilization trends. Claims data is inherently delayed, leaving providers with directional insight but no ability to make timely interventions to improve patient care or iteratively measure the impact of the actions they do take. Many providers have focused on trying to obtain real-time data about when and where their patients receive care through costly, time-consuming, inefficient manual efforts resulting in unattended silos and missed opportunities for provides to collaborate and deliver the highest value care to their patients. Next slide.

We have found that when solutions aimed at addressing real business needs are adopted by engaged providers, many interoperability challenges can be overcome. Providers that have a large volume of patients under alternative payment models are evaluated annually on outcome-based metrics and therefore don't have time to wait for retrospective claims data to be processed before they can take action and are participating in alternative payment models with aligned metrics and best can implement focused solutions, are most engaged in championing behavior change required to achieve true interoperability.

In addition, technology solutions that focus on delivering real business value to providers under alternative payment models have a better chance of being adopted into the existing provider workflows. Many solutions risk trying to address too many interoperability use cases at once, ultimately resulting in additional layers of complexity and lack of provider adoption.

For example, at PatientPing, we are starting by focusing on actionable, simple use cases such as where is my patient? In addition, providers should focus on adopting technology solutions that are best in class in delivering business value and have the expectation that vendors will work together to provide a seamless provider experience, but not require that one vendor deliver all use cases.

Finally, policy solutions that use consistent outcome-based metrics to fully align incentives for providers, across care models and payers, will incentivize providers to not just passively consume data, but also act on this data in a way that truly transforms how to think about and care for their patients.

With solutions like these, we hope that the challenges discussed can be resolved, making it easier to achieve true provider interoperability and result in more seamlessly coordinated care for patients. I appreciate this opportunity to share our thoughts and look forward to the discussion.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thanks Lara. Art?

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
You mean David.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
I'm sorry; David.

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
Yeah, if we could just go back to the title slide, please. Okay, thank you for the opportunity to present today. Surescripts is a clinical healthcare network originally formed in 2002 to replace the paper medication ordering process in the United States. Privately owned by the nation's pharmacies and pharmacy benefit management, Surescripts has evolved to become the leading network for digital medication management and now goes well beyond the original intent of replacing the paper prescription.

A couple of quick statistics; 900,000 providers are connected to the network, and in the last 12 months, sent about 1.5 billion electronic prescriptions or about 70% of all prescriptions in the nation. In that same period, almost 2,000,000,000 patient encounters were informed by medication history, and/or pharmacy benefits information. So by focusing on a narrow, manageable aspect of interoperability, and staying on track through the inevitable ups and downs along the way, we were able to achieve almost universal acceptance and use; ePrescribing demonstrates true interoperability in healthcare and at scale. Slide two, please.

The purpose of this testimony is to provide translatable lessons and experiences that help to explain the success. As you can see on this slide, there are many factors that came into play and all needed to be

addressed. No single item on this page was sufficient to achieve scale, but I would argue that every one of these factors were necessary in some way. I could go into each one of these items individually, each of them is a topic on its own and a lot of lessons that we learned along the way for each of them. But I'll just focus on a few; so slide three, please.

To highlight three of the key factors; first of all relationships were critical amongst all the varied parties with usually overlapping, but also sometimes conflicting views. Providers, pharmacists, payers, benefit managers, Pharma, regulators, technology vendors, researchers, informaticians, CFOs, and most importantly patients, see value and benefit from ePrescribing.

Secondly, having strong and measurable value proposition for every stakeholder was essential. And finally, I would single out leadership within our organization as key to staying on track long enough to achieve the critical mass and hit the inflection point that is necessary to scale. And no matter what factor, everything on this page had to be addressed and managed. Sometimes we saw these issues in advance and were well-prepared for them. At other times the issues snuck up on us and we had to react and respond, and we continue to find new and important issues and it is this continuing evolution and improvement that has become the key to continued success. Slide four, please.

I wish I could tell you the one secret to success, but there is no single silver bullet. More than anything single bullet it is a combination of issues that had to go all right to achieve the progress that we did. If I had to single out one of the most important, overarching themes that I have observed over the past 10 years, it would be that a consistent group of people within the same organization woke up every morning and worried about continued growth and improvement of ePrescribing. These problems don't solve themselves and if any one of them gets out of whack, the consequences could be catastrophic to success.

And before I finish, I should mention that the interoperability we achieved was in a centralized managed environment by one organization that had a mandate from its owners. It still took10 years to get to critical mass. Other forms of interoperability that I see us attempting in the US is trying to use a much lighter touch or a no-touch management approach. I suggest that if it was as difficult as it was in a centralized and highly managed model, how difficult, close to impossible or slow it will be to align all of these factors in a light or no-touch model. I look forward to continued discussion and questions on the topic. Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator
Thank you, David. Greg?

Greg Carey – Technology Standards and Policy Manager – athenahealth
Hey, good morning everybody. My name is Greg Carey and I'm the Technology Standards and Policy manager at athenahealth. My goal today is just to provide some clarity around interoperability barriers and to talk a little bit about how past barriers are being overcome in the private sector today.

So first I just want to say, I think one of the biggest misconceptions, and particularly probably outside of this group, that we may take for granted is that interoperability is not a technology problem. It's always been and it will continue to be a business incentive and people problem, regardless of the standards that are being used. Interoperation is happening today in real-time, while it's not widespread across the

healthcare marketplace; there are pockets where we have seen, and I'm sure many on this call have seen successful interoperation between multiple systems.

The infrastructure is there, the operations are there, and there certainly will be improvements in the future, but I think a great way to put it is, you can put two developers from any…pick any two health IT stakeholders today and put them in a room and give them a week to integrate their systems, and they'll do it. In the future, with new standards like FHIR, you put them in the same room and they'll probably do it in two days instead of four or five. So I actually can't see the slides, so if you want to go to the one after the title slide.

There's three main barriers that we see today in terms of the Interoperability issue. So first is a regulatory fear. The single largest deterrent of information staring is a physician's fear of HIPPA and violating patient consent. Now the fear may not always be justified, but with heavy-handed some of these lawsuits can be and the penalties that are at stake, it's appropriate that physicians would err on the side of caution when sharing information. We've seen it's particularly true when moving information across states with different patient consent laws.

While HIPPA was created for different era of medicine and still requires some clarification and updates, HIPAA still allows for data exchange in the context of patient treatment, and I think there's been a push over the past couple of months to make that more clear to physicians.

The second item, and I think most noteworthy here, is the compliance-driven mindset for innovation. Innovation and improvements in the EHRs are still tendered to certification and compliance with a lot of government programs. It's entirely likely that some vendors define their system improvements almost completely on government programs. This directly impacts vendors and no one has an infinite amount of resources.

A basic market function is that each health IT developer and vendor should be able to listen to the demands and respond to the demands of their consumer physicians instead of building to meet check-the-box requirements. Some of the best developers in the country in health IT spend time to going through, you know 300+ page certification manuals and using time to build to that instead of increasing usability or working to provide better patient access.

And the third item here is really the lack of proper market forces, and we're seeing a change here that the fee-for-service doesn't demand clinical interoperability and as he moved to more value-based payments, hospitals and healthcare providers alike will be incentivized to share more information and it will be a necessity to provide quality care, that you have the right information at the right time. You can go to the next slide

All this said on some of the barriers we face today, there has been a tremendous amount of progress in the private sector over the past year in particular. A lot of the problems are being solved right now by the private sector. CommonWell has a robust patient matching tool, and is also working in looking to improve the C-CDA and the…essentially the government set low bar that has become what some may call the best option to exchange information when it's actually far from it when we have APIs and query and retrieve exchange that's much more useful and suitable to physicians today. The governance of Carequality Framework that was mentioned earlier also simplifies complexities around data sharing, and greatly reduces cost.

I think it's especially noteworthy that these are two areas in particular in terms of the government has tried to solve these in the past and if you look at the Senate Innovations Package from a couple of months ago, in the 10 months or so that they took to write the bill, the private sector had already moved the ball significantly further than their proposals did in that time period. So, it's really difficult for any government regulation or federal policy to foresee how quickly and how far the private sector is going to innovate.

So just in closing briefly, government action should only be focused in areas where the private sector is truly unable to solve the problem, such as revelatory reform and updates of STARK and anti-kickback laws. The market forces should continue to drive real interoperation so that we can achieve the same data portability that everyone here experiences in other information economies today. Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thanks, Greg and thank you to all of our panelists on Panel two. We'll go ahead and open up to the queue for task force numbers. The first member with a question is Jorge.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Thank you, Michelle. This question is for actually each one of you, Scott, Lara, David and Carey. Speaking a little bit about the standard development organizations and the work that the government has been doing for a number of decades, and I think we probably want to predate this work to the initial work that was done under Consolidated Health Informatics dating back to the early 2000s. So that premise, the government has been involved for decades in the interoperability efforts; do you think standard efforts have hindered or stimulated innovations in healthcare information technology? And I'd like each one of you to respond to that.

Scott Stuewe – Director, Cerner Network – Cerner Corporation
This is Scott, so I'll start, assuming we're going in that order. So, I think that standards have played a real strong role in making interoperability a reality, so I don't want to denigrate the standards efforts at all. And in some ways, for example, I described the challenges of non-conformant C=CDAs that are from nonetheless certified suppliers in Meaningful Use Stage 2, so I think knowing that the standards that we have can be…that we can reasonably accept that those standards were actually going to be present, I think that's true that that brings value, if we can assume that documents that are available for exchange for example are conformant and that they…they're conformant to a standard that is set.

That said, I also agree with the gentleman from athena where if the bar for Meaningful Use or for a standard setting as a general perspective is high enough that it's a stretch bar for everyone, then letting what's happening is that it stifles the creativity of organizations to find capabilities above and beyond what those standards require, if they're obligatory standards. I think having standards that can be utilized and that we can pick up off the shelf and use in industry, I think that's valuable. I think mandatory requirements around so many things that we need to accomplish that may detrimentally affects our ability to improve the workflow of our applications, that's when the effort to set standards can have a negative impact.

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

Do other panelists want to respond to that?

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
Yeah, hi; this is David Yakimischak. I would say that standards have in general stimulated interoperability. I would say, however, that they are necessary but not sufficient, as I showed on my slide; standards are actually a necessary component for Interoperability. I would look at them more as though following the need as opposed to trying to lead the need. And what I mean by that is that when there's a will, there's a way. So if there's a will to interchange information, we will find a way and the way we will usually find is standards-based, where standards exist. However, to expect that standards are going to lead the way and provide the silver bullet to interoperability, I think would be a fallacy.

Greg Carey – Technology Standards and Policy Manager – athenahealth
Hi, this is Greg Carey from athena. I just want to support what David says and that's actually exactly what I had written down on my sheet of paper. I think the term or the phrase "standards are necessary but not sufficient" is really important. And standards requirements, I think do the greatest disservice to interoperability because it reduces the incentives of health IT developers to drive forward and increase components of interoperability like usability and query and retrieve.

This needs to evolve much quicker than any government or mandated standard requirement can. And if you look at, for example like a Google maps API that you can plug into from five or 10 years ago, it looks almost completely different than it does today. And I think we can all agree that the product that they bring to market is significantly better today than it was five or 10 years ago.

Lara Sinicropi-Yao – Co-Founder and Head of Product and Operations – PatientPing
And this is Lara; I too would echo everything that's been stated. I too wrote you know standards have helped, but they're not sufficient on their own and they need to be in place not to hinder implementation efforts, they should be in place in a way that they could be utilized and actionable to drive change.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you. Larry Wolf?

Larry Wolf, MS – Principal – Strategic Health Network
Hi, so I want to focus on a specific example that you guys brought up earlier, specifically around ePrescribing, but maybe some of the others can jump in for a similar next steps. So, as we heard there's been a lot of success with ePrescribing, in some ways though, it's a very narrow use case of that first prescription, you know, the initial writing of a prescription getting to the pharmacy. And I wonder if there's some thoughts on what are near use cases that could be expanded beyond that initial one, maybe they're already out there, I'm just not aware of them.

So I'm thinking it could be things like immunizations, it could be things like feedback to the ordering physician on the meds that are being dispensed, maybe the pharmacy and the pharmacist could do a more active role in med reconciliation, maybe automating renewals, I don't…like I don't know what the right next step is, but since you're in that they data mix pretty deeply, what are your thoughts on what the near steps are that we could be taking there?

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
Yeah, sure Larry; thanks. You know, absolutely I think it's essential that there is a roadmap. In other words, you can't do everything at once; on the other hand, you have to start somewhere and getting sort of the basic transactions in place, as well as some value added information to support clinical decision support was sort of viewed as a minimum set.

And then there are additional transactions that are both near and far, as far as adjacency goes, but all in the realm of digital, you know medication management. And as those sort of basic transactions were put in place and became ubiquitous, it then becomes like necessary and absolutely critical to bring out the additional transactions, because at the beginning when you're only doing say a few thousand or a few hundred thousand, when there's a use case that only represents one tenth of one percent of need, it's not relevant in a small transactional network. You multiply anything by a billion and a half, and all of a sudden you've got thousands and thousands of needs for things like canceling existing therapy or providing a change order or providing hey, the patient didn't come and pick up their medication.

So I sort of was…I'm glad you asked the question because I think we can't just look at this as a point in time, but that there's a roadmap for every one of these very narrow sort of verticals if you like, that someone has to oversee and make happen. And again you need that consistency and that long-term vision and stick-to-itiveness, because each one of those takes time. Now that we've got 900,000 deployed, it is not easy to roll out new transactions and new services because of the install base challenge. But somebody has to do that and that's consistent with what I had to say a little bit earlier.

Larry Wolf, MS – Principal – Strategic Health Network
So I wonder if we could…if others had thoughts about the sense in which we do have sort of very heavily siloed activities, and in some ways each of you was talking to…well, some of you were talking to some things that are siloed and others were maybe suggesting some more infrastructure-based things.

But I think about, you know the problem of where is the patient getting their care that PatientPing is focused on and there was prior, you know commercial vendor-based solutions for patient referrals and patient tracking to coordinate care from acute care hospitals on discharge to various post-acute settings and those solutions never really achieved much, while they could technically achieve interoperability with post-acute care clinical systems, in reality they didn't and they didn't integrate very much with HIEs as those got stood up. And so I kind of wonder about are we over-narrow casing this? As much as we need the narrow use cases to move forward, they don't seem like they're generalizing very well. So I wonder if you guys could speak to that; how do we actually get the broader use of the things that are starting to show up?

Lara Sinicropi-Yao – Co-Founder and Head of Product and Operations – PatientPing
I think that that…this is Lara again, I think that's a great question and I think that that really speaks to the need for good and efficient integration between technology solutions. I think that the vendor should be working together to deliver and integrate these use cases in a way that results in providers having one seamless experience that…but yet still have access to all of these solutions that are built sort of with focus and clear purpose.

Scott Stuewe – Director, Cerner Network – Cerner Corporation
To get the…this is Scott from Cerner again. My thought about your question is that, you know these use cases are less siloed than they are unique to the workflow in which they should logically belong. So, if

I'm going to place a, you know a notification for example or any transaction of interest to a constituency inside of the EHR or elsewhere, you know it needs to be in a logical place inside that system for it to be of use to the provider, and so it's difficult to generalize. It is hard work to figure out where the best place is to surface a transaction and, you know certain things are obvious and other things are not so obvious. So, particularly as you're talking about new capabilities. So I think what we're looking to do is try and generalize the infrastructure componentry as much as possible.

So being able to utilize a transport mechanism or an infrastructure support, you know like from CommonWell or from some other infrastructure that exists, so that I can utilize, you know that component to surface the transaction where it needs to go. That I think, the challenge that third parties have working with Cerner, for example, is that connecting to us is…ends up being too much of a hand-hewn exercise every time and so we look forward, for example to SMART containers that allow us to have applications that can, you know be built entirely by a third-party and then embedded in our solution.

So I think a SMART on FHIR approach is a way that the workflow can be unique to the capabilities or to the requirements of the use case and to the end user population, but not be tied up of the Gordian knot of the development exercise that a big healthcare IT supplier experiences.

Larry Wolf, MS – Principal – Strategic Health Network
I guess I'm hearing a message of build on infrastructure and that we're going to see likely evolving things, sort of like the earlier comments about standards being necessary but not sufficient. I guess I'm sort of feeling like we have been talking like we're on the verge of critical mass, critical breakthrough for a pretty long time now, easily a decade, maybe more in looking at different use cases; so any thoughts or wisdom on how we actually take that next step?

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
This is David Yak, I'll just jump in. You know, my view is that this is not a technical or a standards or an infrastructure issue, but many of the panelists have referred to sort of the, what's the value proposition? What's the motivation? What's the need? And I think focus on that would provide the most impetus. I mean, we've published in peer reviewed journals the fact that Meaningful Use incentives have driven behavior. We see the statistics on our network; it's a fact. So I would look at those kinds of opportunities to drive behavioral change.

I also he…I very much agree with what the fellow from athena said in terms of, you know there's so much effort going into checking the box and meeting a whole bunch of certification and standards requirements, are really addressing getting the job done or are we kind of, you know, it's window dressing to make it look like we have interoperability, but are we really achieving the outcome, would be my question.

Larry Wolf, MS – Principal – Strategic Health Network
Thanks.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Michelle, I have a question in response to that if nobody else is waiting.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Larry Garber actually has a question.

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
You should go first.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
None of the IT stakeholders used the word usability in their testimony and, you know, this is a recurrent theme for these hearings that…which, you know, it tends to be that it's a people issue, it's a sociotechnical problem, yet millions and millions and millions of federal government dollars have been spent to try to solve this problem. Why is usability not an issue for you folks when you testify?

Scott Stuewe – Director, Cerner Network – Cerner Corporation
So this is Scott, I did actually use the word usability in my testimony, but I'm not sure, maybe I muttered. But absolutely usability, particularly as more data becomes available is going to be a huge…has to be a huge focus for us. You know, there's things that we're already doing as a community of suppliers to try and provide a better view, for example, I think one of the panelists mentioned that "V" in VDT is not very usable, I mean making views that are parsed and mashed up views of the available data is work that some of us are doing.

And, you know providing a much easier way, particularly as we head into Stage 3, to do reconciliation is, I think, something that we all are going to be in the process of re-factoring as the Stage 2 Meaningful Use requirements around reconciliation were a pretty low bar and the higher bar in Stage 3 will mean we'll have to get better. I think this is a case where the, you know the obligations under Stage 3 are frankly just supportive of what we wanted to do anyway in this particular case. Users need to have that…the ability for some of that preprocessing of the data that comes in so that they can figure out how to reconcile in a sensible way. And those of us that are needing to provide usable workflows for reconciliation for Stage 3, are actively creating what we think will be more usable, you know more usable workflows for that.

I think that's…if we can't focus on that, then we won't get people making sense of the data that they've got access to. Just being able to see it is, if it's confusing, if they can't find it, if they don't know it's there, if…those are the biggest drags on usage, not actually the interoperability question first. It's how usable is what they are getting. If it's native and usable and in their workflow, I think you can expect that that their use of it will go up. And as they start actually relying on it, that will actually drive improvements in the technology, both in the plumbing and in the fixtures.

Lara Sinicropi-Yao – Co-Founder and Head of Product and Operations – PatientPing
Absolutely and I just take the opportunity to sort of reinforce the point that I had made in my remarks to, you know true interoperability is more than just sharing data, it's enabling providers to act on that data and enabling providers to do that means that they are consuming data in a usable way. And I think that usability is challenging, making sure that a product is truly usable and inter…and works into many provider's workflows, takes focus and to sort of continue to allow different vendors to optimize usability for specific use cases while encouraging vendors to integrate and work together to provide a seamless provider workflow, is really necessary to achieve what we want from an interoperability perspective.

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
And this is David Yak; I would say if somebody needs to know that they're interoperating, then we probably failed. Okay? In other words the word I had on my word chart was workflow integration and what that meant was that the providers don't even know that they're interoperating and that they're ePrescribing. What they're doing is they're in workflow in their…whatever pathway or whatever system they're using to arrive at the proper medication, and they can focus on the medication and the therapy. And oh, by the way behind the scenes when they accept things, they hit the button, it's interoperating.

But if you need to know that you're interoperating, I'd say we probably missed the boat in terms of user experience and integration. We certainly did not have success when ePrescribing was a standalone application, we needed to get EMRs deployed and the applications need to be deeply embedded, to the point where the user doesn't even know that they're doing it.

Greg Carey – Technology Standards and Policy Manager – athenahealth
And this is Greg; I'll round out the group on this one as well with two quick points. First, I think a lot of the compliance requirements have an impa…have a large impact on usability of EHRs because the industry, you know has demonstrated again and again that the majority of the vendors are going to build to that low bar specification and some frankly stop innovating from there. When it's a more market-driven approach, they're forced to continuously innovate and iterate on past versions in order to survive. Those vendor resources while large are not unlimited.

And then the second thing is, to talk about David's point, the physicians don't care how the information is arriving and being surfaced to them during their workflow, they don't need to know particularly, you know is this coming…is this lab result coming from a document received via CommonWell, and is the clinical note coming from a point-to-point interface; they don't care about that stuff, they just want to know that information is there, at the right time and it's in a workable, usable format.

So I think as the market continues to shift to a more value-based model, these voices should have more volume and vendors should be able to respond and should be forced to respond more the demands of their consumers.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay, this is Michelle. We have a number of questions in the queue and we're pretty short on time; so I'm going to ask those with questions to be fairly concise and those who answer to also be concise. So we'll start with Larry Garber.

Lawrence Garber, MD – Internist/Medical Director for Informatics – Reliant Medical Group
Thank you, Michelle. So each of you in the panel to some degree are building databases that show relationships between patients and providers and…these relationship listing services or record listing services, yet none of you span the whole country and it's important that as a nation we be able to identify where patients records are and where they've had care. So how do you propose to interoperate with each other? Are we going to place you all with one, are we going to interface with each other? Do we make a new standard that you all have to conform to? I'd be interested to hear. Thank you.

Scott Stuewe – Director, Cerner Network – Cerner Corporation

So this is Scott from Cerner. So wearing my Cerner hat, you know, we believe that we need to be a part of a collective that allows us to use one infrastructure to find such data. And so our exercise so far in that regard is CommonWell, although that doesn't mean that that's the only such infrastructure that might be available in the future, but that is infrastructure that's available today.

Not everyone yet participates, we hope that everyone will, I mean that's…the goal would be to have one, we might even be able to create a standard to allow one to even interoperate with another, but it…we don't believe that it's going to be possible for us to connect the disparate networks in states to solve that problem. We believe that an infrastructure that is national in scope is required.

David Yakimischak, MBA – Senior Vice President, Information Systems – Surescripts
And this is David Yak. A couple of weeks ago, recently we introduced a national record locator service, which is national, although it will never be universal. What we would look to do is build that based on the assets and the information that we have, of course using data rights and consent overlaying all of that, which is an issue that didn't even come up very much, your data rights and consent to me is a very, very critical issue. Nevertheless, when there are evolving standards and/or opportunities to interconnect these services, we certainly would look forward to participating in those, but we are taking a national scale and national scope to that particular problem.

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

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Thank you and thank you for the presentations. So it's…your presentation started with the good news that Scott had, you know talked about where interoperability is taking place. It seems like a theme in the panel has been that there are solutions to interoperability but there seems to be more an aspect of policy environment that may affect it in terms of how it moves and becomes like the norm.

So my question to all of you was, is there a policy environment either in the region or in a state that you have found to be conducive to the kind of interoperability promotion that you think will happen nationally that can be used by us in terms of understanding what would be the right policy environment to promote this interoperability experience?

Greg Carey – Technology Standards and Policy Manager – athenahealth
Hi, this is Greg…

Scott Stuewe – Director, Cerner Network – Cerner Corporation
This is Scott, that's a great…go ahead, Greg.

Greg Carey – Technology Standards and Policy Manager – athenahealth
Go ahead.

Scott Stuewe – Director, Cerner Network – Cerner Corporation
No, go ahead.

Greg Carey – Technology Standards and Policy Manager – athenahealth
I would just really quick have one thing to include, and maybe it's too narrow of a focus, but I think it's worth noting that we've seen that states that have in particular in regards to CommonWell, states that allow patients to be…to opt in to CommonWell as the default for patient consent see much higher interoperability and exchange of information than states that require the question to be asked in order to have a patient opt in. Essentially the default is opt out and you have to ask that the patient put in, and I don't know if that's a workflow thing, or you know, I've seen folks at the front desk and just that extra little pop-up screen that says, you know do you want…does the patient want to opt in or opt out, they may not even get that question sometimes. So the ability to have opt in be the default for some of these patient consent sharings has gone a significant way.

Scott Stuewe – Director, Cerner Network – Cerner Corporation
Yeah, so this is Scott again from Cerner, I'd…so the...I would echo that idea. In addition, I think states that are less prescriptive about participation in the state exercise, are helpful. So if a client…if clients are already feel served by technologies and capabilities they've already deployed and if they then also have to do something else, it ends up being a challenge. An interesting place that seems very amenable to lots of…allowing 1000 flowers to bloom sort of model, is Texas where, you know where there's…it's an opt out state and it also is an environment where there are numerous regional exercises and they are also embracing national exercises as well, like CommonWell.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay, a lot of people put their hands down due to the timing. We did have a question in the chat from one of our task force members, from Kelly Aldrich that I am going to read. One concept that is worth calling out is that we need to ensure interoperability security and target of usability as a top priority for all care team members, nurses, pharmacists as well as physicians. I guess it's not a question, it's a comment, so I apologize, I should have read it first. So we did have members put their hands down, I just want to check and make sure I saw that Janet Campbell, you did have your hand up, did you want to ask a question? Or are you good?

Okay, it sounds like Janet is good.

Janet Campbell – Vice President of Patient Engagement – EPIC Systems
I'm sorry, yeah, I'm good; that's why I put my hand down.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay so we actually are ready to move on to our next panel. So thank you all from Panel two and now we'll move on to Panel three. So let me just do a quick check to make sure that we have everyone. I know that we were having trouble finding one of our participants, so we may move him to the end. So Panel three is our federal and state stakeholders; we have Art Davidson on the line, Art, are you there?

Arthur Davidson, MD, MSPH – Director, Public Health Informatics and Epidemiology and Preparedness - Denver Public Health Department
Yes, Michelle.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, Art. Was Bob Calco able to join?

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Yup, I'm here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Okay; hi, Bob. John Kansky?

John P. Kansky, MBA, MSE, CPHIMS, FHIMSS – Vice President and Chief Executive Officer – Indiana Health Information Exchange
I'm here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hi, John. Daniella?

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program - Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
I am here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
And Tom Check?

Thomas Check, MA – President and Chief Executive Officer - Healthix
Yes, I'm here, thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Great, okay we have everyone. So Art, whenever you're ready, go ahead and lead us off.

Arthur Davidson, MD, MSPH – Director, Public Health Informatics and Epidemiology and Preparedness - Denver Public Health Department
Okay, thank you Michelle and maybe you could mo…thank you for…that first slide. Good morning, I'll be sharing perspectives from my experience as a public health official and a family physician within Denver Health, a vertically integrated safety net healthcare institution providing services and care to nearly 30% of Denver's population. My interoperability comments are tied to the Federal Health IT Strategic Plan and will focus on two separate aspects of our health ecosystem. Next slide, please.

Getting to a healthy state requires more than just visits to a care provide. Patients need easy referral…Next slide, please…easy referral and access to community-based resources to a system. Thank you. Social determinants of health influence the outcomes of patients and we need…clinicians are challenged to adequately address the factors within the context of clinical care.

If you go to the next slide, public health officials need to understand their communities through health assessments. The granularity of nationally conducted surveys in my county is limited. Sub-county analysis to understand disparities and where to conduct community-based interventions are impossible. Interoperability is essential in both situations. Community-based resources that I'm going to speak about now, were from the point of view of the family physician.

I remember a Vietnamese-speaking patient who lived near my clinic. She had prediabetes and needed a referral to a diabetes prevention program and a food bank. While verifying culturally appropriate services for her, would I ever hear about what happened at the community resource? Did she connect or was it a failure? Information flow between a community resource and medical provider is almost nonexistent. Having spent 30 billion for EHR adoption and implementation, we must do better. Next slide, please.

This figure describes a model where interoperability is presented… represented by solid blue arrows between entities. All of these messaging services should be automated. We've been doing something similar between a provider's EHR and a Colorado Quitline. With others around the country, the North American Quitline Consortium has now proposed HL7 standards for use by virtually all Quitline providers using C-CDA documents to make referrals and receive feedback. Quitlines typically have robust informatics infrastructure to support such referrals. What happens with a local YMCA, a DPP class or other resources like a food bank without capacity to support HL7 and HIPAA compliant messages?

A provider and patient in the green box need to conduct an automated query for what culturally appropriate, community-based resources exist by circle one. Real-time results should allow the provider to present options to the patient; a HIPPA compliant e-Referral would then be sent to a secure referral hub supporting communication with many community resources, by circle two. These resources often have very limited information technology. Just like the Quitline, the goal is to have feedback return directly to the chart through a HISP using Direct-mediated messaging.

Key problems are poorly developed taxonomies for communicating about social determinants. What's the SNOMED or ICD-10 code for food scarcity? Or code for community-based services and the absence of a shared referral hub for non-EHR enabled service providers? These represent both semantic and structural barriers to interoperability. Go to the next slide, please.

On the public health side EHRs represent and enormous opportunity. Here the challenge is finding a common data model to which EHR data may be converted. In Colorado, we've been following a distributed data access frameworks developed by the FDA, the Mini-Sentinel and PCORI, the PCORnet to aggregate data. In the figure you see rates of obesity by neighborhood in Denver County gathered from EHR data from nearly half of all children and youth. Several healthcare providers have decided to share their data.

Similar maps have been developed for depression, cardiovascular disease, tobacco use, and diabetes. These maps support a learning health system where we engage with policymakers, community

organizations, and the general public. These analyses focus discussions and identify disparities otherwise unmeasurable from national or local surveys. EHRs have immense power to support population health monitoring and inform community or clinic-based policy decisions.

The interoperability challenge for aggregating a standard representation of EHR data is present in thousands of jurisdictions and health departments across the country. These again represent semantic and structural interoperability barriers. As an ex-HIT Policy Committee member, thank you for your leadership and efforts to create value from our national investment. I appreciate this opportunity to highlight some interoperability challenges for clinicians, communities and public health entities. I look forward to our conversations.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you, Art that was perfect timing. Bob, if you're ready?

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Hi, I'm ready, so if you can pull up the slides. Next one. So my name is Bob Calco and I'm with Apex Data Solutions. We are a private vendor in the VA space right now; I'm going to give you quick overview of who we are what we're doing and the kinds of technology we're trying to bring to market. I will give you this overview of our experience with medication reconciliation at the VA, kind of a case study, not a lot I can say about it in five minutes but concise. Some of the persistent challenges that we've faced and we see the industry facing and some emerging opportunities that we envision coming out of both of these experiences. I'll try and…and look forward to some questions.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Uh-oh, did we lose Bob?

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Yeah, I don't see the slide changing. Hello…

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
There we go, yup, the slides changed.

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
There you go, wonderful. All right, so we were founded in 2013, the company emerged from a VAi2 annual employee innovation on technology-enabled digital documentation. This is one of their annually voted innovations that get kick-started once they're voted. The concept behind this, the technology-enabled digital documentation was voted number 20 out of some 3800 ideas. We have a Wiki that describes what we did in the innovation, you can see the link there, and a paper came out of that about some of the lessons we learned while applying, you know various NIST recommendations to the idea of documenting at the point of care.

Our technologies that we're working on a full stack, meaning they cover the full spectrum of the different architectural layers and they're aimed at improving documentation at the point of care, the point of service, with specific focus on the idea of telling the story. A lot of folks have mentioned

previously that it's very difficult with all the data from all the different sources to make sense of it; it's cognitively challenging. So that's a big area that we're working on.

The other component to that is filling in knowledge gaps; how at the point of care can we get the information that's needed for improving the outcomes, improving the care and filling in the knowledge gaps is very much tied to how much of the story you know.

Another issue for us is baking-in usability from the ground up and that basically means presenting to reach each participant in a healthcare scenario with a UX that is meaningful, relevant, and drives the purpose of their meeting versus driving them crazy. We see a lot in the healthcare space with very complex EHR GUIs that cause folks to have to make a lot of clicks just get their heads around the encounter that they're about to have with a patient.

And again, it gets back to workflow, people have been talking about that in the other panels; workflow is very key and drives user experiences, it drives whether they find those experiences to have been pleasant or not, but it also drives whether or not it was effective and efficient for purpose. So, all of these pieces are pieces of a puzzle that we're working on and we've had a chance to test some of these ideas out in practice at the VA. Next slide.

So we, immediately coming out of the innovation we had an opportunity to work on a specific project, the use case for medication reconciliation. We didn't know it at the time, but there were some other efforts within the VA trying to tackle the problem. And our effort won a sort of bake-off because I think we touched on some really important insights that I'm hoping to share with you in the context of interoperability today.

First of all, if you look at the problem of medication and allergy reconciliation, aside from being mandated by Meaningful Use criteria, and I totally agree with folks who spoke previously that sometimes these mandates can actually stifle creativity instead of unleashing it. This particular use case is nice because… it's sort of a full stack, small, simple thing that can describe why this is important. And it illustrates the need, an architecture that supports interoperability and it's the distinction between architecture and infrastructure is something I could probably talk for a long time about, but the big…we saw in our early efforts on medication reconciliation at the VA was that the architecture…there to support what they needed to do.

And as a result, the expectation set of the stakeholders was very, very low. You know, they were having to make all sorts of compromises because, you know, they knew they just couldn't do. You know, at one point they said, well we know you can't give tablets, so this is what we came up with, or we know we can't get the data from there, so this is how we make do with what we've got. And that speaks to the problem that is true in any big enterprise, and the VA is a very big enterprise. Often times the ability just to interoperate within a given system is hard enough, let alone interoperating with external entities like the DoD or other agencies.

What we learned from this experience is that as important as it is to gather all the data up, and our solution does that, it's really important to tell the story because the provider…and they need to know, you know, others know about this, kind of how do we understand the medication list we're seeing and the allergy that we're seeing relative to their problems.

And so a lot of these domains are interrelated in how they have come to affect this particular patient, you know why are they on this drug? Why are they, you know what allergies are being treated? How do these drugs interact? And all of this is actually really important and it's a matter of life and death.

One of the things that came out of our working with the VA was an understanding of the magnitude of it. There are thousands of deaths a year that happen because of drug interactions that occur because a provider prescribes something that they…because they didn't know that they were taking another drug, that caused that interaction. In fact, I've got some personal experience in this in my family recently. So, you know, this is really important stuff and we need to distill the information in a way that is cognitively helpful.

And this was actually, the folks we worked with in the VA were from the Informatics Consortium and they've done a lot of study of this and…are very different. And if you're going to have the provider and the veteran sharing a reconciliation session together, they have very different needs. The veteran tends to need to see one thing at a time and kind of focus and the provider needs to see lists of things and they can't create one user interface that makes everybody happy.

Next big question is what does it take to fill in the knowledge gaps that are uncovered during the session? Well…

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Hey Bob, can you please wrap up and we can maybe answer some of the remaining parts during the question and answer session.

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Umm, sure. So we need to be able to assist the providers, at the point of care with the right information and we need to be able to write back to the systems of record. And this is really important, too. Next slide.

Some of the persistent challenges, and these have been touched on by previous…others are data standardization, but even within an environment like the VA where you don't have the semantic challenges that you do cross-EHRs you still have some subtle semantic differences. Our PMS was built for the Indian Health Service around the concept of an encounter; VistA's built around the idea of departments; they're both written in FileMan, they're both written in MUMPS not really semantically equivalent in how to treat things, so these are really important things to understand. Most…today, whether they're…they lack the conceptual tools needed to tell the story and fill in knowledge gaps. And then to top it all off, you've got policy obstacles to interoperability that are driven by orthogonal concerns, particularly security. Next slide.

The emerging opportunities we see are opportunities to improve the architectural support for interoperability within large organizations like the VA and the DoD. It does take a lot of collaboration between the business side and the IT side and when you don't see that collaboration, there's not a lot of progress; but when you do, some big things happen.

We also can learn from recent advances in multicore programming and semantic technologies. There's new approaches to databasing that are coming out that are quite transformative. This gets back to the

idea of how do you do storytelling versus just dumping data. And we have to be cognizant that there is a lot of different databases of record with different views of the same information, and we…there are degrees of truth associated with them.

Finally, just one last point, as the public and political pressure to interoperate mounts, the policy decisions that are required to break these logjams need to be made thoughtfully because the concerns over security and privacy are very real and very valid. It's one, you know you can say let's all just use OAuth, but these are…these become very high target systems for hackers and for, you know clandestine types that really can use this information for damage. So we have to be sensitive to that, but we also have to get to a better place infrastructurally and architecturally; and that's my presentation.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thanks Bob. John?

John P. Kansky, MBA, MSE, CPHIMS, FHIMSS – Vice President and Chief Executive Officer – Indiana Health Information Exchange
Yes, thanks and thanks for the opportunity to provide input today. I'm going to spend the first of my five minutes on perspective, because I think it's important. Next slide, please.

So I'm going to be speaking from the perspective of a large, long-serving health information exchange and I think that that's important to acknowledge for a couple of reasons because there is some competing or complementary models of interoperability that are being tried across the country. I want to acknowledge that health information exchange assumes an intermediary between data sources, which is the HIE and there are models being tried where it's EHR-to-EHR without an intermediary.

HIEs do have the advantage of having a local market presence to solve the local problem that is healthcare, largely a local problem and can work and I think I'll share that in my presentation. We have a history of working synergistically with the EHR vendors. So, next slide, please.

When you ask for our perspective on what are the greatest challenges to interoperability? I went to the place that some of the others have gone. I've got two slides, this slide and one other slide left. These are macro-challenges and then I've got a slide on micro-challenges. But let me just say that the most difficult challenges to interoperability never have been technological, they are and have always been economic workflow, perception of…the perception of value of sharing data.

So just to give you some examples of interoperability challenges, across the rows in the table, the apathy of non-sharing organizations, and by that I mean that all healthcare organizations have decades of history of doing what they do without the data sharing and interoperability that we're trying to create. There's a perceived lack of sufficient clinical or economic value of sharing in some cases, where organizations see some value, but not enough to incur the cost of that data sharing. There's the inherent economic challenges of small data sources; so the cost per patient record of interoperability goes up as the organizations get smaller.

And then finally, there's the challenge, and this is a significant one of making the data exchange fit clinical workflow. We have an example in Indiana and Ohio where we got four health information

exchanges exchanging CCDs, but because workflow wasn't considered, there was no usage and no perceived clinical value. Next slide, please.

So finally focusing on some of the micro challenges, which I think when…if we're trying to focus on nationally connecting, this is where some of the discussion leads and where…but I'll just focus a few of them. Across the rows in the table, gaining agreement with sharing partners on CCD content. The challenges are sometimes the partner perceives that you're sending too much data or you want to send aggregated data, they want single episode data or do you want all the data or only the most recent? Second challenge, operating within the capability constraints of various EHRs; in our experience as an HIE, of course you have to be agnostic and work with all electronic health records and we've had success in doing so. But you have to work within the capability constraints of the different EHRs.

And then finally, the need to normalize semantic coding. You can do things…you can move data around and get a document from one doctor to another without normalized semantic coding, but the value of what you can do with health information exchange and with interoperability is much, much greater if you can get to the point that semantic coding is normalized between sharing partners.

Finally, just acknowledging that the lack of standards and the lack of unique patient identifiers are not significant barriers to interoperability, as we've see historically. I'll look forward to participating in the discussion. Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you. Daniella?

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
Hi, I'm not sure if the slides that you guys finally uploaded were the ones that had the building or if they were the ones that there were reduced to the animation, so…and I'm having a really slow Internet connection here, so I haven't even seen the slides yet, so bear with me if I end up having to ask you what's up on the screen.

So I'm coming from a very different perspective, as the Co-PI of the pSCANNER Clinical Data Research Network, the case for interoperability in research networks is the same requirements, but very different use and we heard a little bit about this before, so the advantage of me going at the end of this discussion is that many people have already said the kind of things that I would have said as part of this.

So the pSCANNER Clinical Data Research Network includes the VA, as well as multiple academic medical centers and federally qualified health care centers across the country, with most of our concentration in California. In order to participate in this network, all of these sites had to normalize the data in their electrical medical records to not one but two common data models with the same physically persisted relational database across each one of the sites. And that range is from very small FQHCs with tens of thousands of patients in each practice to the VA, which had, you know 16 million patients alone in that one system.

And the different kinds of things that we ran into…if you could advance to the next slide, we're very much oriented around the core problems that you've heard a lot about already today. So there's no incentive to have interoperability and standardization across these different partners. There is not any workflow value to having all of your data captured in the same format; so it's the root cause of a lot of the interoperability issues that we see is happening at the point of data capture, not at something that's happening on the internals of the technology.

And to reinforce the point that we don't think that this is a technology problem, if it were a technology problem, it would have been solved by innovators over the time periods of all of the different sort of iterations of Meaningful Use that we've experienced. So is the next slide up? I can't tell what you guys are seeing, are you seeing our maps from the different EHRs on the left-hand side through to the…through to all of the different programming that our teams have done?

M
Yes.

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
Okay. So I'm sorry, my Internet connection is really, really slow, so thanks for filling me in that, at least what you're seeing. So what we have all done from our independent electronic medical records to…so to get…to get through this process of data standardization has been to build some incentives into the data partners for the expensive process of getting data interoperable. So there are still a lot of challenges in doing this work, so there's distributed analytics so we can collaborate across the network without sharing individual record level data, allows us to do outcomes research, population health, predictive modeling that can be reused into the artifacts that we're hoping will be…deliver a value to patients like Anna.

We collaborate with patient-powered research networks who are creating increasingly a demand for better normalized records that are usable within their different platforms and able to interoperate with each other and other networks. So one of the values of persisting the data in a standard format is that you have cleaned it up, done quality control and normalized it in a way that it can be accessed by a single patient, so the right authorization and authentication.

And finally we've been really thinking a lot about what the different business cases might be for our partners to continue to participate in this kind of work, because it is very expensive and it doesn't necessarily contribute to the bottom line in a ready way.

So one of the things that we've done is create a shared transformation program to many other standard models that are used for different kinds of research and business purposes, including the quality data model. So offering the ability for all of our sites to get their data into a standard can be used for quality reporting and then generate QRDA reports has been a way for them to both benchmark against each other, but also drill down into that data and get a better understanding of what elements in their workflow are contributing to the fitness of their data for quality reporting.

We've talked a little bit about some of the other potential business cases around ePrescribing and patient demand that are slowly giving some more incentives in creating a business case for this kind of

activity. But the other thing that we've started to discuss as we try to expand our partnerships more with payers is getting a sense of whether or not some of the prior authorization information for care plans can be codified in a way that's interoperable with the data that's coming into our data warehouses and being returned to docs in a timely manner so that they would be able to build out their decision-making process. Not only around what our resource models are saying are best for patients and what the quality measures and guidelines are saying are best for patients, but also what might be business drivers for this.

But that would require changes in policy as well, so getting a codified way of expressing prior auth so it can be lined with things is much like what has been done with drug formularies, but with a lot more complexity around referrals and procedures and the kinds of things that might be ordered. So I do think that the success of integrating formularies into electronic medical records has gone a long way to improving standardization of drugs. And if we were able to do that with other kinds of orders through automation of prior auth for those kinds of things, it would also help us deliver better value to both the payers and the clinicians that are participating in this work.

But it does take constant care and feeding to retain interoperability. One new clinician in a practice that's using a record in a different way can create all kinds of anomalous material that's coming through on the other side. And so we have to constant monitoring and supporting of the data quality and rarely are we able to capture all of the different issues that might be coming up.

So in order to incentivize that kind of activity, that kind of business process analysis and continuous improvement of data quality, we've been really trying to figure out the ways that the business case can be made, not just for academic medical centers, but for the small and large organizations that don't necessarily have a good research incentive. And I'll conclude there.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Daniella, if you could please wrap up.

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
I'm done.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Perfect. Okay, moving on to Tom.

Thomas Check, MA – President and Chief Executive Officer – Healthix
Hi, this is Tom Check at Healthix; thank you for inviting me to comment today. And if you go to the next slide please. The challenge that I'd like to address is the challenge of how to provide truly actionable information to a healthcare provider or a care manager. And you'll see in a minute why that's a challenge that we're addressing very directly at Healthix. Let me…this is actionable information rather than just a flood of information, it's increasing the noise to signal ratio in the data we make available to providers and care managers. So if you go to the next slide, please.

Just a word about Healthix; we're the largest health in…public health information exchange in the United States. We have data of 16 million people in New York City and Long Island, with 247 healthcare organizations who are contributing that data. They are healthcare providers, they are health plans, they are public health agencies at 1350 locations across New York City and Long Island. And what we do is we provide secure data for improving quality, efficiency and effectiveness. We importantly provide clinical information in real time, and that's what I'm going to address, and we facilitate care coordination.

So increasingly in pay-for…value-based payment and other kinds of systems, it's important to coordinate the care of the individual to get the best outcomes. And that's where health information exchange, public health information exchange that brings together data from multiple sources is really so important.

So on the next slide, we have a slide here of the volumes of transactions that we experience on a monthly basis. And you'll see the two big numbers are in the middle. What our providers and our care managers that are in participant organizations in Healthix find most effective really is for us to notify them, the clinical event notifications, for them to notify them with an alert when a patient that they're tracking experiences a condition that that provider or care manager is concerned about. And we'll talk in a minute about what those kinds of conditions are.

But rather than query-based exchange where they're coming into us because they want to get a piece of information on a patient, certainly that happens, and the leftmost number there, patient records view, is query-based exchange. They very importantly want us to tell them when something has happened to the patient they care about that they then need to follow up on.

And going along with that, the largest number on the page, the clinical documents delivered; 247,000 per month are the number of CCDs that we push out because very often they want to receive the CCD, whether a longitudinal or an episode CCD into their systems so they can integrate it with their electronic medical record and there in their existing workflow they can decide what to do with that information; so all those comments about workflow are correct.

The CCDs that we generate of course draw on the information we have in the patient from all of the sources, and that's really what a public health information exchange enables. We're also able to let them filter if they want to get a CCD just for specific time periods or just with a subset of the data. And then of course off on the right, we also support Direct messaging, especially for nursing homes that don't have electronic medical records that are fully integrated with Direct as it is. But very importantly, we have 16 million patients in Healthix, 1.3 million of those patients are people for whom on of their providers or health care managers has subscribed to receive clinical event notification.

So on the next page, slide 12…the next slide, we have again the challenge then is how do we make the information that we provide as actionable as possible? And the solution for that is monitoring the clinical content of patient information as it comes in, compare it with the previous information and see if it's…if cumulatively it's creating information that we need to push out to the provider or the care manager. You can really only do that aggregation of information and comparison of the current information with the previous condition if you're using a repository model HIE and not if you're just waiting for queries to come in from the provider and not if you're just rerouting ADT events that happen.

So in the last slide, the kind of clinical event notifications that we've provided historically…if you can flip to the last side…we've provided historically, of course, are events that occur such as I present at the ED, I present as an inpatient. What we're deploying now in the right-hand column is when a clinical content comes in that that provider has said they want to know about for that particular patient. On the last bullet there, the changes to care plan, very importantly in value-based payment systems, somebody has got a care plan for the patient, so the provider wants to know if there's been a change to that care plan. We can monitor that, and we can alert the provider of that fact.

And then down in the bottom, what we have currently in development; we've gone through a pilot and we're now expanding to production is systems to be able to determine the predictive risk of future events or the occurrence of a chronic condition being first diagnosed. That again is the kind of information you can only get by accumulating information from multiple sources on the patient, monitoring it over time, and then detecting when there is a change in condition that causes you to want to present actionable information to the provider for their intervention.

And again, this is the kind of thing that can happen through a repository HIE. It does not happen by only allowing query at the time that the provider is aware that they want to retrieve information. So, I'll conclude there and I think we will turned over to the panel.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you, Tom and thank you to all of our panelists. We will open it up to task force members with questions now. Jorge has a question.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Thank you, Michelle. Tom, with regards to your last statement that you made regarding the solution that you've created, is it fair to say that you're actually describing a solution that provides a record…behavior at the point of care? Do you think that's a proper assessment of the technology you just proposed?

Thomas Check, MA – President and Chief Executive Officer – Healthix
In othere…so, what we're talking about here is that the provider or the care manager has told us that they want to be alerted when condition changes, when prospective risk changes, when things like that change. We become aware of that when we get information at the point of care, but the person that's delivering care at that point may not be the care manager who wants to know about it. So care manager A may want to know when there's a change in patient condition; they go to an emergency room and the emergency room provides data that we then detect shows a change in condition, then we alert care manager A, who would not otherwise have known about it.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
So those instances of care that you just alluded to, are they transactional admission, discharge, transfer exchanges or are they point-to-point clinical applications?

Thomas Check, MA – President and Chief Executive Officer – Healthix
It is…it goes beyond the encounter, the fact of an ED admission or the fact of an inpatient admission and it goes beyond point-to-point. It takes the clinical data that arises from the encounter real-time from the EMR, compares that with the information we already have on the individual, and draws a conclusion

there as to whether this new occurrence is a change that is the kind of thing that the subscriber wanted to know.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Okay, thank you.

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

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Thank you, and thank you for the presentation, it was very informative. My question is for Daniella. I think it was very interesting you talked about your experiences with the common data model and we were just having this discussion of needing an infrastructure for interoperability across the nation. So, because this…your effort is mostly focused on research, and you just mentioned how you were trying to at least look at applications beyond just research into, you know creating value, would you think that the PCORnet model is scalable to go beyond research to real-time interoperability as required for care at the point of care?

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
So I'm nondenominational when it comes to data models, which tends to be something that's very controversial because people spend so much time and effort getting their data standardized, they become very attached to them. I would say with modifications that would allow it to be extensible, it could become such a model that would enable that kind of activity, the kind of things that we just heard about.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
And do you think there would be any policy changes required in order to make that happen in an expedited way?

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
Yes.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Such as?

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network

Yeah, I think that there has to be a business incentive for having your data persisted physically in a standard model. There's no question about that. Research is not a business incentive.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Thank you.

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

Larry Wolf, MS – Principal – Strategic Health Network
So continuing thanks to all the panelists, this is been some really great material presented. And I sort of feel like there is this push pull in what we're hearing between standards are really important but standards are not the main barrier. So having said that, I'm curious about on one of the slides that Daniella presented and maybe it's just an artifact of the slide or maybe it's telling us how things are evolving, but it showed several vendors…several feeds from a single vendor, presumably different providers with the overlaying tag of custom interoperable programming, was very extensive. But then there are other feeds that look like they're from the same vendor that don't have that. So I'm wondering if there was…if there's evidence that we're actually getting better and that the world of standards to build on is actually heading us towards better and easier interfaces. Is that the case?

Daniella Meeker, PhD – Keck School of Medicine; Director, Clinical Research Informatics Program – Southern California Clinical Translational Sciences Institute; Co-PI pSCANNER Clinical Data Research Network
I can definitely speak to the differences between implementations of the same vendor. I think that things are slowly improving as we've been at this for about five years and…is getting a little bit better, especially with regard to labs; there's been a huge difference in how much more semantic interoperability we have since Meaningful Use required LOINC.

However, even within a single implementation of the same vendor product, you have many, many different ways in which even two departments within a single organization might define something like an encounter. So there are challenges and while the standards…so it's still a lot of work here. I don't want to discount how much value Meaningful Use has added to what we've been doing, but I think that it hasn't been enough of a driver to get us all the way to the finish line, to have real…interoperability.

Larry Wolf, MS – Principal – Strategic Health Network
So I guess I'm hearing standards help, but even when they're there, they're not the whole story and that patterns of use could make a really big difference. So maybe I want to pivot from that to the story that Tom was telling us about Healthix, and I'm very intrigued with what you're doing with these alerts, because I think that that's sort of an example of sort of cutting through a whole lot of data to pull some things that might be specifically actionable. So, can you say anything more about how you got to this? What's driving it? What are your specific barriers or things you've found sort of surprises that turned out to be easier than you expected? And what's your sense of the kind of uptake you're getting?

Thomas Check, MA – President and Chief Executive Officer – Healthix

So thank you, Larry. We're umm, well first of all, it…we're really impressed that there are so many of our participant organizations that really want to receive even just the basic kind of alerts that say, you know you're patient's in the ED, your patient's in the hospital and they say, this is great but I know this. And then, of course, when they start getting a lot of those alerts, then they say, but how do I zero in on the ones that I really want to intervene in. And that's where we realized that we needed to open up and look more at the clinical content of the alert, you know, we needed to know that this is a care manager that's monitoring a diabetic or someone with congestive heart failure, so they want to know if they're presenting to an emergency department related to one of those kind of complications and not someone who had just a fracture or something that they wouldn't care to intervene in anyway; they're getting the right care.

And then that took us beyond that to saying, you know care management is so important, people are really trying to coordinate the care of populations of people who have complex conditions; this is the core of the value-based payment programs. And so in order to coordinate that care, they really need to know when the person that they're monitoring, especially the folks that are at greatest risk of bad outcomes and of developing chronic condition, and so that's where we got into analytics and recently implemented analytics software that does that predictive risk modeling.

And there again, we don't want the user to have to go into their predictive risk model to comb through and try to figure out which of their patients they're following has fallen into a higher risk threshold. We want to let them know when that happened. So we really view the whole thing as our detecting intelligence in the information that comes into us and then giving actionable information back to the provider in a way that they wanted to at the time they wanted to.

Larry Wolf, MS – Principal – Strategic Health Network
So thanks. Let me ask some of our other panelist either by what they're seeing in their organizations with their members on sort of this need for actionable information and where they see sort of the next steps they're about to take or they're currently taking? And also I have the feeling, and maybe this is the right group to be asking this question, but in the same way that ePrescribing took some very specific focus and then lead from scattered use to very high use over the period of a decade, is there something similar around public health reporting where there might be one or two use cases or standards where we're close to actually getting something that would scale and maybe it's an opportunity to start to move something forward.

John P. Kansky, MBA, MSE, CPHIMS, FHIMSS – Vice President and Chief Executive Officer – Indiana Health Information Exchange
Larry, this is John Kansky from IHIE and I'd like to chime in and just say that we're talking about interoperability today and not sustainable health information exchange, but we've found that to fulfill our mission and also be sustainable, it's helpful to figure out as many valuable things that you can do to serve clinicians in the healthcare system.

And so because you're using the same…you're leveraging the same data streams, the same clinical data repository to do multiple things of value, so sending notifications to care managers, and supporting that transaction with clinical data from the repository is valuable. Delivering laboratory and radiology results electronically into EHRs across the healthcare system is valuable. Making longitudinal clinical records to available in EH and in emergency departments and inpatient care settings is valuable.

And the thing is that you can do those things with, I'm going to pivot to the earlier question on standards, you can…the thing about standards is that they're absolutely necessary to do these things. Where standards stifle innovation is when a regulation requires a specific "how" to accomplish interoperability.

Larry Wolf, MS – Principal – Strategic Health Network
Thank you.

Arthur Davidson, MD, MSPH – Director, Public Health Informatics and Epidemiology and Preparedness - Denver Public Health Department
Larry, this is Art. I didn't talk about this in my presentation but all efforts going on right now with regards to the public health use cases, and you know previously spoken with the committees about electronic case reporting, there are efforts going on right now…(2:45:35Indiscernible, audio cutting in and out)…with CDC and ONC and state and state…organizations to kind of…to fruition…(Indiscernible audio cutting in and out)…use case that's similar to what John just described, but…and…has been doing many of these things already, just sending it on to the public health rather than to the EPs…someone else as John just described.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
Michelle, I have a follow-up question if there's nobody in line.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Anjum also does, so go ahead Jorge.

Jorge Ferrer, MD, MBA, LSA – Biomedical Informatician –Veterans Health Administration
I have a question actually for Bob Calco, Bob; did you feel that medication reconciliation can teach us a few lessons about the overarching clinical reconciliation efforts that were initially part of Meaningful Use? Do you think that, you know, maybe you can comment on why you chose medical reconciliation which is one of the hardest clinical informatics problems to solve?

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Right. No, I definitely think there's lots of lessons to be learned from medication reconciliation. One of the really important things to understand about it is that aside from, like you say Meaningful Use and the mandate to show that you can do it, it really saves lives. It's one of the areas in medicine that, you know there's a lot of interrelatedness between the different domains that are around or that relate to a patient and medication is sort of the nexus of a bunch of them; what's in the problem list? What are they are allergic to? What's their history, the demographics?

And, you know when you start teasing apart the problem of medication reconciliation and you start looking at, as we did, we had to in the VA, had to look at the infrastructural issue of how do we just get what we know about this patient into a form and format that's usable for the clinician? You know, we discovered that, as a lot of folks have been alluding to, it's about workflow, it's about having an outcome; in this case, you know you want to make sure that all the sources of knowledge are on the same page now after this session.

There's something else that really interestingly happened on our project that I think speaks to the larger issue of analytics and the power of, you know bringing intelligent reasoning and whatnot to clinical decision support and that is, everybody wants to know what's in the…did the patient have a new med added, did the patient…there's also a lot you can learn…clinical reconciliation itself from start to finish. And we had some very interesting requirements that really spoke to the desire on the part of the providers to really get underneath whether or not the approach they were taking was working or not.

And so they had a lot of metrics requirements that they requested and getting back to a previous point that was made about, you know when people tell you "how" it's a lot harder to function. They had a lot of preconceived notions of the "how" to…and how to compute them. One…thing was kind of…(2:49:03audio cutting in and out)…it's going to be one of the things that comes out of our effort quite apart from…(Indiscernible - audio cutting in and out). What we learned is that they really did want to know what (Indiscernible - audio cutting in and out] from start to finish and they have good reason, you know clinical efficiency of this current workflow we have for reconciling meds and allergies. What's the effectiveness of it? They want to understand if it's a useable process and…(Indiscernible - audio cutting in and out) in the context of workflow. These folks wanted…

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
We're just getting every other word now. I'm sorry.

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Oh, okay, sorry.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
You're breaking up.

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Can you hear me now?

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

Bob Calco – Chief Architect and Lead Developer – Apex Data Solutions
Okay. So…medication reconciliation can teach us a lot in the large, but it can also teach us a lot in the small and when you look at the what happens in a reconciliation session between the provider and a patient, and maybe even the team of providers, you can learn a lot about usability, you can you learn a lot about the need for decision support, the need for intelligent alerts. One of the examples there is, you know it can become obvious to a provider that the patient's not entirely telling the truth about what they're taking, right and there's ways that we've been asked in the user interface to surface that as a possibility, so the provider can see that and interact with.

So the metrics problem, the ability to generate the metrics is motivated really by understanding things in the large. And they want to be able to do things like find trends and do interventions with at risk veterans, and that gets back to the heart of what the guy from Healthix was saying, too. You want to be

able to predict some of these things. You want to get to a place where the technology is less obtrusive in terms of how they experienced it at the point of care, but at the same time, it's more valuable. I'm just going to stop there in case there's a follow-up or the folks…

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thank you. Actually, this is Michelle, due to timing, I think that we need to wrap things up. We need to make time for a couple of comments. So let me thank all of our presenters for participating today, we can't thank you enough for sharing your insights with us and taking time away from your busy schedule to share them with us.

Public Comment:

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Operator, can you please open the lines?

Lonnie Moore – Virtual Meetings Specialist – Altarum Institute
If you are listening via your computer speakers, you may dial 1-877-705-6006 and press *1 to be placed in the comment queue. If you are on the telephone and would like to make a public comment, please press *1 at this time. Thank you.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology
Thanks, Lonnie. While we wait to see if there is any public comment, just to let all of you know, we'll be having a recap and talking about next steps that come out of today's hearing during our public call which is…our next public call which is next Wednesday, May 11 at 10:30 Eastern if any of you all are interested in listening in. And so for our task force members, we'll plan to recap what we heard today and talk about next steps and how we can use what we heard today in future recommendations.

My apologies for running a very close to time, but again we appreciate everyone who participated today and for everyone's patience as we got started a little bit late today. And it looks like we have no public comment. So I know we're really at 1 o'clock, but I just want to check quickly with Jitin and Anjum to see if you have any closing remarks or anything quick to say before we shut down the line.

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
This is Jitin, I'll just say thank you very much to everybody who participated today, we really appreciated the perspective and hopefully we can do justice to all the great comments you provided today as we take our task force work forward.

Anjum Khurshid, PhD, MPAff, MBBS – Senior Health Systems Strategist – Louisiana Public Health Institute
Yeah, this is Anjum; I also want to thank the panel members for very informative information and also to the task force members for very good questions and I'm sure that we need time to digest this, but this has been very enlightening. Thank you so much.

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

Thank you everyone and have a wonderful weekend. We'll talk to you all soon.

Jitin Asnaani, MBA – Executive Director – CommonWell Health Alliance
Bye.

Jorge Ferrer, MD, MBA, LSA Biomedical Informatician –Veterans Health Administration
Thank you.

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

Public Comment Received During Meeting:

Dr. Kelly Aldrich: Dr. Kelly Aldrich Informatics Nurse Specialist, Center for Medical Interoperability Chief Clinical Transformation Officer. Comment, Thank you all for your excellent comments. One concept that is worth calling out is that we need to ensure interoperability, security and target of usability is a top priority for all care team members, nurses pharmacists as well physicians. Thank you

Interoperability Experience Task Force – Meeting Attendance

Name	05/06/16	04/26/16	04/06/16	03/23/16	03/08/16
A. John Blair, III		X	X	X	X
Anastasia Perchem	X	X			
Anjum Khurshid	X	X	X	X	X
Christopher Ross				X	
George Cole	X	X	X	X	X
Jane Perlmutter		X		X	
Janet Campbell	X	X	X	X	X
Jitin Asnaani	X	X	X	X	X
Jorge Ferrer	X	X	X	X	X
Kelly Aldrich	X	X	X	X	
Larry Wolf	X	X	X	X	X
Lawrence Garber	X	X	X	X	X
Phil Posner	X	X		X	X
Shaun Grannis		X		X	X
Ty Faulkner	X	X	X	X	X