



# Transcription

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Justin: Thank you, everybody, for joining, and welcome back. I'm very excited about our next panel on Customized Care Everywhere, a topic that's actually not being discussed across the show floor. I walked around HIMSS16 a little bit yesterday, and certainly, a little bit more this morning, and we don't have this topic covered. And it's so critical to the future of healthcare. So I'm very happy that we're addressing it today. We have a great key of panelists. There's six of us total up here right now. But what I'm going to do is hand it over to Gus Venditto from HIMSS, VP of Content. We're going to kind of co-author this panel, just co-moderate it. Just because I can take a little bit of a break. This is my sixth hour or so on air. But I appreciate you, Gus, joining us.

And then what we're going to do is everybody introduce themselves around the horn. So actually, I want everybody to kind of hear their voice, of the audience. There are a couple of thousand people online listening, so I want them to hear your voice, and your name and voice, and associate that. So when we kind of bring it back around. And also, I do ask, when you come back on air, that you do announce your name, just so everybody can hear. Because there are six panels. Usually we do four, but we went with six today. And actually yesterday, it worked really, really well. But Gus, I'll let you take it away here and have them work around the horn and introduce themselves.

Gus: Thanks, Justin. So we're going to start with John. Introduce yourself.

John: Yeah, sure. John Gresham, Vice President with DeviceWorks, part of the Cerner Corporation, and pleasure being here today.

Gus: Thank you, John.

Andy: Yes. Andy Heins from LifePoint health, based out of Nashville, Tennessee. I'm Senior Director of Information Security.

Gus: Fantastic.

Craig: And I'm Craig Klein. I'm from Red Hat. I'm responsible for Red Hat's healthcare business in North America.

Gus: Fantastic.

Ajay: And I'm Ajay Dholakia. I'm a senior engineering staff member at Lenovo based out of North Carolina.

Gus: Excellent. Thank you. Great. Thanks, everyone. So, let's get into the discussion here. We're going to start with trying to baseline some things and get

everybody on...see where they are, whether we're all on the same page or off different places. So John, I'll let you start. How would you define cloud? Because cloud computing is...

John: It's a big word, for sure, yeah.

Gus: It's understood by people in very different ways.

John: Yeah. I typically think of cloud as obviously, remote computing, internet-based computing, multitenant in nature, scalable in architecture. It can scale up and down quickly, so, elastic. You'll hear people talk about elastic computing, being able to scale up and down based upon demand and the environment. That's kind of how I define cloud. It's kind of matured over the history, traditionally being more application service provider, remote hosting, and so forth. And those are different ways to deliver solutions and applications over the internet. But what I think of pure cloud, I think of those concepts.

Gus: Mm-hmm. So, Andy.

Andy: Yeah, I would probably add onto that. You know, cloud's been around for a long time, but with the advent of marketing, the cloud has become more known through notoriety through Apple and other things. So scalability of application-based only cloud computing versus the mainstream of data centers and so forth. [inaudible 00:03:22] you hear more about is the remote hosting and so forth.

Craig: And from my standpoint, from a technology standpoint, cloud means a lot of different things to a lot of different people. When I look at cloud, it's all about the infrastructure, flexibility, elasticity, agility. So it can be cloud, which would be a development environment [inaudible 00:03:46] development from a [inaudible 00:03:47] environment, or cloud hosting applications and having the ability to be flexible [inaudible 00:03:53].

Gus: And Ajay, how do you define cloud?

Ajay: So, for me, I think all of these are very good definitions. What I like to think about it is it's a way of organizing IT that makes life easier, both for the cloud provider, as well as cloud administrator, as well as the cloud user. We are trying to achieve concepts like agility, multitenancy, security, ultimate goal being how do we make life easy for the user of that technology.

Gus: So moving on quick. How do you define mobility?

Craig: I look at mobility as anything from a digital device that's out there in the marketplace that's going to transfer data back into the backend system. And so the [inaudible 00:04:41] piece and the technology perspective is the application allows you to develop those multiple applications. So mobility could be a lot of different things. But from a Red Hat perspective, mobility is tying those devices back to the backend.

Gus: Ajay, would you agree with that, or...?

Ajay: Absolutely. And I think one of the aspects that comes into mobility is you want to continue to do what work or personal activity you are doing as you transition through environments. So it could be an office. It could be a clinic. It could be a hospital room. It could be home. It could be car. And what you want to be able to do is not be interrupted or at least seamlessly be transitioning across these, so that you have better ability to complete the task that you're trying to achieve.

Gus: John, the Cerner perspective on mobility?

John: I would...

Gus: In your own words, of course.

John: I would agree with Ajay in the definition. We're mobile creatures by nature. And with that, we need to be able to support whatever functions, actions, capabilities we need for that moment in time and having applications and solutions which support that. Certainly mobile devices come to the forefront when you think about that. But we think of it more broadly in the way that it was just described. You could facilitate that through a number of different form factors, technologies, to support that mobile use case.

Gus: And Andy, with the provider perspective, from LifePoint Health.

Andy: Yeah. So I think it's a combination of flexibility, being able to provide data, as well as from the application standpoint, at any place anywhere. So obviously, that comes from great responsibility to ensure that the systems we're putting in front of our users are secure, down from the application level. If it's just an application, or if it's a private network that you're receiving services from. So you know, that's one of the things that we really look at a lot from a solutionary[SP] standpoint, whether it's an application cloud product or an individual private network that we're [inaudible 00:06:51] from.

Gus: Yes. We'll go to Ajay to move to the next question here, which is security. How do you define security in the healthcare spectrum?

Ajay: In my mind, security is a layered construct. It starts to include the ability for a user, or a patient, or a clinician who is providing the care to be able to interact with each other, exchange data, be authenticated that they are the people that data belongs to, for example. So what you want to be, defining securities and environment that lets these types of authentication and then exchange of data, ultimately leading to better care, be enabled. And that, in my mind, would be the ultimate goal for a secure healthcare environment.

Craig: Yeah.

Gus: So John, what do you think?

John: So when I think about security in healthcare, typically in the past, it's been this balance of do you provide a better user experience, or do you make the environment more secure? I think given the importance of PHI, our information as consumers and wanting to make sure that's secure, we can't balance those two anymore. So we have to be able to facilitate having highly secure, highly trusted systems that can facilitate the sharing of that information, the data, and ensure that at the center, the person's information is secure. And Craig, what do you think? Nothing. Yeah. I'm sorry.

Craig: Security is all about protecting the PHI. There's different areas of security to look at from an input perspective. But I think why security is so important these days is if you look at where healthcare is going in terms of changing the connectivity that has to happen to be able to do value-based care and those type of things, it's going to become more and more important to make sure things are secure. So it's about securing all the different devices to make sure you can do this communication and be able to protect that at the same time.

Gus: And Andy, what do you think?

Andy: Yeah, I think I can probably go on for the next 30 minutes and talk about just security. From a standpoint of applications, to mobile devices, to all the different controls, there's definitely defense in layers, down to cyber security and the vendors that we partner with that provide the services from a cloud standpoint, I think five years ago, the industry standpoint is much different than the services that are being brought and investments that some of the cloud providers, especially in healthcare, that folks are starting to emphasize an increase into the spending to ensure that everyone's data that is in these systems is secure. So it's very exciting to see that the importance is kind of being drawn

out right now from the market. Unfortunately, the market is learning through all the breaches from the cyber events. But I think from an education and awareness standpoint of allowing folks to understand why the security [inaudible 00:10:02] when HIPAA went in place in '96 and where we are today, why we're performing the actions with multifactor authentication or remote access, and being able to explain that to providers and understand the importance of why we're doing these things. So there's definitely a lot of upside and a lot of room for improvement.

Justin: Thanks, guys. This is this is Justin again. And thank you, Gus, for leading the kind of the level [inaudible 00:10:27]. I think it's very important for of us to all get on the same page regarding mobility and security, and certainly, cloud. So, now, shifting into kind of the customized care and diving into this topic specifically...and also, for anybody out in the Twittersphere, for all the listeners out there, you go to HIMSS Radio, #HIMSSradio on Twitter, and actually see a live picture of the panel out there, so all the handsome faces that are on the stage right now. But again, as we're diving into the panel here, where can provider organizations start with creating a customized care strategy? It can be a daunting task, and I'm sure it's complex for some people. But also let's give some people with an actionable intelligence or good next step. So, Andy, let's start off with you. From your perspective, where's a good place to start for a customized care strategy?

Andy: You know, I think it goes back to understanding the workflows within the provider setting, to really optimize the business requirements of what you're trying to achieve and how to provide better outcomes from a quality standpoint. Those are the various...probably from focus standpoint is really around quality.

Justin: Okay. Craig, what are your thoughts?

Craig: Well, it's not really my area of expertise. But from my standpoint, to be able to do customized care properly, it's all based on information. So you have to have good information to decide what you're going to do. So, again, it gets you back to connecting all the endpoints to make sure this information's tied back together.

Justin: Excellent point. Yeah.

Craig: So if you have the key information tied together, you can do the analytics on it to make the right decisions.

Justin: That's fantastic. Ajay, what do you think? And where to start for creating a customized care strategy?

Ajay: So I think the ultimate goal, again, ties back to mobility. And patient has a kind of a lifecycle, if you will, or a progression through that care in terms of initial diagnosis, to providing some on-site care, and potentially continuing that when the patient is back in the home environment. So the customization of care has to travel through these domains, if you will. And so one of the ways to start out is to make sure that we have, in the primary, the hospital- or clinic-type setting, the appropriate infrastructure and data access available. Mobility is something to leverage there because the care providers, there may be one, there may be multiple. There may be one day, one hour, or multi-day event, whatever the case may be. You want to be able to have that data available, and then seamlessly transition it to the steps that are coming through. So start out where you are currently most comfortable and then build it out.

Justin: Excellent. Yeah. That's fantastic. John, for DeviceWorks?

John: Yeah. So when we think about customized care, you could look at that from two viewpoints, for the patient and the person. And how's the environment? That's going to be very important as we look at the future of care. And as more transparency and more ownership and accountability for our health extends, how do you take data and infuse data, as was said by the other panelists, in a secure manner, to provide context, to bring more intelligent information to the surface more quickly for those users? Also from the provider/clinician perspective, when I think about customized care, I think about breaking down the data silos that exist in the traditional acute and ambulatory environments. That can be everything from your bedside medical devices that may exist in the environment, and the network, and the systems that communicate there, to the EMR or EHR systems and other imaging systems. And how do you facilitate the sharing of that information in a more seamless fashion? So think Internet of Things and Internet of Medical Things, and how do we facilitate the sharing of that data real time to be able to start to do more intelligent things with it? So be able to start to facilitate a different experience and a customized experience, whether mobile or whether on a desktop, depending upon the form factor that makes sense for that setting, to have it customized to that provider.

Justin: So, just kind of a little bit of a follow-up, the show, over the last couple of days, is looking for best practices and actionable intelligence of where people can start. Because some of these are fairly large undertakings, no matter what the size of the organization. So I'll throw it out there for anybody here. We'd start off with you, Ajay. What would be a best practice that you've seen on creating a customized care strategy? Where could someone, you know? What do you think [inaudible 00:15:08]...

Ajay: So I think I'm going to pick up on what John said. You separate out the perspectives. So is it the provider perspective, or is it the patient perspective? And I think that provides a clean starting point. What you want to do is make sure that from a provider point of view, one care provider or a team of care providers are all able to collaborate, come together, not necessarily physically...

Justin: Right. Yeah. That's excellent.

Ajay: ...through the use of technology, in a way that makes that patient receive care faster than would be possible if you're only doing it by having everybody together at the same place. I think that's a good place to start. And then from a patient point of view, I would say at the moment, it's an education. You have to learn about some of these technologies to get comfortable. That flow of information is happening. So I think that would be the next step to go drive forward: how do we make the patient more aware and educated about getting that customized care?

Justin: William [inaudible 00:16:09], want to jump in here for some best practices that you've seen?

William: I think it starts obviously if you take the provider perspective for a moment, it starts with [inaudible 00:16:18] what are your value outcomes you're trying to achieve? I think sometimes we lose sight of that. We see lots of technology out there and we want to implement that. But we lose sight at times of the valued outcomes we're trying to achieve. And many times, that's not just achieved through technology. It's achieved through process change and other things you need to do for your organization to facilitate the use of that. In regards to getting started, it would be breaking down those data silos. For instance, if you're not doing anything with device connectivity in your environment, how can you begin to get that data out of those devices that are in the environment or maybe on a patient's wrist with their Fitbit or Garmin, how do you get that data into your environment and start to facilitate the transaction of data? How do you integrate your systems? Most provider systems have already integrated those systems, but it's those disparate surrounding solutions...those would be the one recommendation. And then the other is care team communication. How are you going to facilitate the care team of today and the care team of tomorrow. And the care team of tomorrow is going to cross the continuum of care. And how are you going to facilitate that from a communications standpoint? I think those are two key points.

Justin: Andy, any thoughts that you have from LifePoint?



Andy: Yeah. So I agree with what he's saying 100%. And I think that one of the big things is to be able to be engaged in that process, particularly from a security perspective, understanding what are the pain points that are driving the change. And from a security standpoint, obviously, the mobility, solutions that we put in the hands of the providers and clinicians. And we'll put it in a way that's been able to securely be a part of the overall success plan we're laying out for the organization. So definitely understanding the requirements and kind of wrapping security around...and, I think, educating folks at the same time, what the risks are, the trade-offs, if there are any, from a decision standpoint.

Andy: That's excellent. And Craig, any best practices you can think of, or...?

Craig: To me, I completely agree with what they're saying. I think one of the things that I see that happens a lot, you see people that have bad systems or bad things that they're doing, and they think if they apply technology to those situations, it's going to fix it.

Justin: Completely agree.

Craig: And unless you have your systems and your house in order, applying technology is just masking what the problem is. So you have to make sure that you fix the underlying problem first before you apply the technology. Because if you do it in the wrong order, you won't get the right results.

Justin: It's almost like having a baby to save a marriage. Do you hear that analogy out there?

Craig: Right.

Justin: Goodness gracious. But actually the follow-up on...and even what you said, though, a best practice that one of the nurses from New York Presbyterian, she actually had some nursing informatics. There was my greatest earlier today, and she had a fantastic best practice that they do every single year. They look at what they had implemented over the year for new processes or workflows, and they see what can they pull off. Because in [inaudible 00:19:27] technologies, they layer on and layer on and layer on. But you never take a look back holistically. What can we peel off? How can we simplify? And every single year, going back to say, "We made changes." And sometimes you make changes on the fly really fast. And so you don't realize that you've complicated things, or then you layered on top of it. And now, she said we go back and look at all of our processes. What do we simplify? And every single year, we do that.

John: Yeah. Part of the problem, and you see this all the time when you install systems, is people go in and install the systems and they're still doing processes that they don't really need to do anymore. And they need to be able to say, "Okay. If I'm going to use the technology to make sure I have those covered...and what can I offload?" That's the best way to use it.

Justin: Very true.

Ajay: So to add onto that, there's a flip side also. You may find people rushing, as you were saying, that just because we now have rolled out a new technology, I don't need to do these process steps. And so there is equal danger in going down, pegging the needle all the way on the other side. So really driving the transformation and that change mentality is the key to this being successful.

John: I'm glad he brought up this, John. I'm glad he brought up the change management process. So one of the things we're trying to adopt is more of a mindset of almost taking the agile development processes of continuous advancement of development process, and applying those to IT system processes. And so how can you start to really not think of it as, "I need that next big upgrade to get that piece of functionality, but always be in a continuous advancement mode." I like your analogy of peeling it off. I think that's important as part of that continuous advancement, but it shouldn't be these big stair steps. It should be a more gradual...with cloud-based computing and some of those concepts with mobility and the way those applications are deployed, those will better support the way software is delivered and how we think about continually advancing our environments to support the care processes that we want to affect the [inaudible 00:21:29].

Gus: I agree. So I wonder if you could talk about how you coordinate between the clinical, the workflow, the human side of it, and then the technology side. Because John, you were talking about really managing technology development. But then within the hospital, the workflow's changed, technology sometimes is faster than the ability of the staff to handle it. So Craig or Andy, you've had experience with this.

Andy: Yeah. So I would say that it's definitely a complicated process because a lot of folks have to be involved from a technology infrastructure standpoint to a business leader that's saying, "There's a new technology," security, privacy, legal...definitely being engaged throughout the process of if it's a new applications, if it's going to be hosted, or if it's going to be in the cloud, and kind of vetting the overall process. Obviously, the larger your environment becomes, and more folks are wanting to move quickly, it could get challenging to be able to provide very fast feedback on whether a product's secure or if it's,

you know, from a cost standpoint. So all those different items are reviewed and evaluated. People [inaudible 00:22:47] to hopefully, the right outcome decision. So that's something that's maturing, I would say, every day with our organization. We continue sort of going down that path.

Gus: So John, have you had experience with this or offer any tips?

John: Yeah, I mean, some of the tips is just kind of defining what is your model experience that you want to...we use that term. That is a Cerner term. But what is your model experience that's going to deliver that key valued outcome, and trying to standardize around that, both from a process standpoint as well as your applications? And with many organizations...how many hospitals do you have?

Andy: Seventy-two.

John: Seventy-two at LifePoint. So how do you define the same way to handle certain clinical scenarios and develop a model across those systems, even if you're not running the same technology. I think that's important, and that's very valuable in the process.

Gus: Ajay, what have you seen in your experience?

Ajay: So I think part of the balancing act that we have to do is technology is expected to hide the complexity. Some of that complexity is in the technology of the previous generation, but a lot of it is also in the interactions with that technology. So taking that step of education, use, and I like the term you said, "the model experience," so that you are setting some metrics. That helps us, for example, from a device or infrastructure design perspective, from middleware and software perspective [inaudible 00:24:21], that that whole collection of the system stack has to come together and allow us to meet and check those metrics. So back to the point of, yes, we can hide the complexity, but it's only hidden inasmuch as it is...I think, you know, the awareness of that has transitioned to the user, so that they can "bring that model experience" to the next level. So I think that point needs to be at the center of driving any of these transformations.

Gus: So Andy, with mobility, we're getting more data. Care coordination is designed to learn from all that data and help us adapt and improve systems. Is that happening? Are we getting overwhelmed with all the data?

Andy: So I'm a big fan of the data. It's important to watch, gather, and [inaudible 00:25:12].

Gus: He points to the wrist, yes.

Andy: Over time, I think that, in my opinion, that's probably going to probably mature, whether your physician can trust that information, whether it's a blood pressure pump or a heart pressure, blood pressure. The Wi-Fi scales that [inaudible 00:25:31] to connect in. So there's a lot of Internet of Things that I'm excited about. I personally use a band that has the heart rate monitor in, you know, your sleep number. So I think those things are all going to evolve. I'll be interested to get your feedback on that.

Gus: John, at Cerner, I'm sure you support everything.

John: Yeah, we support it. So I talked about device connectivity and the importance of being able to get data off. The next step that the industry really needs to solve for is how is the provider going to utilize and visualize that information? How is the organization going to...? Are you going to have your steps every day going to the electronic record? Do you want that data in that electronic record, part of your permanent record, or do you want to just visualize it there? I think those are concepts we still have to work through. Certainly, you want to be able to view those in your personal health portals and view. But what does the provider see? And what does the organizational allow to be entered into that record without some sort of process to facilitate that? But it's definitely a must to be able to get that data, to get more intelligent insights into how we can begin to start to more proactively manage health.

Gus: Yeah. So Craig, I know Red Hat knows how to deal with data. That's what you provide, you know, the managing of the large data sets.

Craig: Well, you go back to the mobile question. And if you look at mobile, one of the challenges you have with mobile is if you start to hook everything up from whether it's these barometers or heart rate monitors or what you have, you end up with so much data. So how much data do you really need to keep? So you end up either with a complete data storage nightmare, or you have to look at it and say, "Okay, what can I do? What do I really have to have to make the correct decisions?" So if you look at the bigger picture in healthcare, as they to drive all these value-based care plans, it gets into how do we drive down cost. And the only way we can drive down cost is to be able to know what the outcomes are going to be. And the only way to know what the outcomes are is to see what's actually happening out there. And it's a big leap. We have taken it there.

Gus: So, Ajay, I'll throw it to you. Because at Healthcare IT news, we know our readers find analytics to be one of the most important topics. [inaudible

00:27:59] now focused on getting the analytics, getting the intelligence out of it. How do people take that next step? Are we there? Would we know the intelligence? Or are we still developing the questions to ask?

Ajay: I think it's an evolving process. So it's going to be continuous learning. The algorithms that go behind handling of that deluge of data that's coming from all these sensors that we are all talking about, it needs to be staged in a way that is most meaningful for the purpose that it's being collected. So whether it's being done right at the first aggregation point, or whether it's being put into large repositories and would be analyzed overnight for use down the road, there's that whole continuum that's in between. And we had to find the right algorithms that are going to be driving that. And that will be coupled by the expectations, so the experience that is intended. What I find interesting also is that it's, once again, not just technology. There are issues of who has control over that data. So is it that the patient is going to be able to set the dial on "Alert me when this and this happens?" Or is it going to be the care provider? And really, how does that handshake take place? So there's, again, a lot of small, continuous evolution that has to be taken place. I mean, analytics are here to stay, no question. But it'll come in incremental steps.

Craig: Right.

Gus: Yeah. John, what do you think the next step is with adopting all this analytic data?

John: Yeah. So one is we have to aggregate all this data. We have to normalize it. We have to transform it to be able to begin to rely upon it, trust it, and have a mechanism to continually clean the data, manage that data. And then from there, you can begin to build out...based on what your value metrics you're trying to achieve, begin to use that data more intelligently. So definitely here to stay, I think, without having to find use cases that you're trying to address or I want to drive down diabetes in my population. I think it's those at-risk models and the reimbursement models continue to change, drive the need to be able to get to that data in a more seamless fashion. So that's how we kind of think about it.

Andy: Yeah. I think from that whole...everything out here, I think, is about analytics. It's got huge [inaudible 00:30:45]. I think it's still really maturing. And [inaudible 00:30:49], you know, you're taking in that data and seeing how you can actually consume it and work through it. But at the end of the day, it really comes back to problem-solving, actually getting into the hands of providers and clinicians, to actually use that data for better outcomes, for better

quality. So I think that's where the evolution would probably go. That's the things that [inaudible 00:31:09] kind of work on or I wish they would work on.

Gus: Yeah. Well, it seems like we're really in maybe the first inning of a ballgame with analytics. Everyone's shaking their head yes.

John: Yes.

Andy: Yeah.

John: This is John. One thing I would add is what's key is how do you get it back into the workflow. So it's great to do all these analytics, a great retrospective. But how do you get to real-time analytics? How do you get to delivering that back into the workflow to actually impact the things that you're trying to impact? Because when they're retrospective, it's a little bit harder to change that behavior and drive the different behavioral change. And so that's a key part as we start to see more emerging standards like SMART on fire. I think that'll help facilitate the ability to drive those analytics back into the clinical workflow process.

Gus: Well, and speaking of on fire, another big topic in...and I don't know if we have time to get too far into it. But interoperability, that does seem to be a key theme here at the show. ONC had some announcements, the Secretary of Human Services, Burwell, made some announcements. Cerner I'm sure feels they're up to it.

John: Yes.

Gus: Yes. But Ajay, what do you see with interoperability? Are we also in the first inning or the second inning?

Ajay: Yeah. I think we are maybe not far beyond that. So we're doing around that time, first to second inning. What I like that Secretary Burwell, the HSS Secretary, said yesterday is that patients are telling their story through the data. Now, that data is being captured at different points of contact in so many different formats, and there are so many different systems. Part of that drive forward is going to have to bring in interoperability. The analogy that comes to my mind is manually driving a car or flying a plane to now all automated, computer-generated. So a lot of analytics went behind the scenes to enable that type of automation to come in. And I think we are at the beginning stages of that within healthcare. So slowly, that automation will come to be seen as helping the care provider and the patient, as opposed to overwhelming them. So still that [inaudible 00:33:25].

Gus: Well, Andy, at LifePoint, are all your...you have 72 hospitals at LifePoint, right?

Andy: That's correct.

Gus: Completely interoperable, every bit of data available to every doctor at any time?

Craig: You're supposed to say yes.

Andy: Yeah, so that's a continued area that we're looking at. We're a growing healthcare company. So every hospital or practice that comes on board, we have to take a look at those, and understand those workflows, and how we can optimize those, and how it looks within the entire ecosystem. So that is the end goal at some point. But right now, there's a varying level of interoperability.

Craig: Right. Yes.

Justin: Because I actually want to shift a little bit also, too. You mentioned the patient a little bit before, and I kind of want to dive into the patient a little bit. So with a customized care strategy, what is the value to the patient? Because, I mean, the center of all this is the patient. So let's transition a little bit over to that component of the conversation. So Ajay, you brought up the patient first. So let's go ahead and...

Ajay: So, I think, in my mind, what's happening is we are shifting from the model of...and that probably is a bit along the way of the provider or the doctor knows best to a collaboration between the patient and the care provider. And that's driven by that data, which is describing whatever it is that they are talking about. So from a patient perspective, the real challenge is when that degree of comfort...right? is this the right next step? Is this the right set of next engagements to go and look for? Do I trust...and education will play a lot of role in there. Technology will play a lot of role in there. Hiding all that complexity through technology, as I mentioned, will play a lot of role in there. So that mindset shifting is happening. Now, we have to back it up by the proper technology and processes that we need to make it [inaudible 00:35:24].

Justin: Craig, do you have any thoughts there on the value of the patient?

Craig: Yeah. To make it valuable to the patient, they have to have information. So you have to go back to interoperability, right?

Justin: Right. Yeah.

Craig: And if you look at interoperability, we're talking about analytics. I don't think we've seen the technology yet that's really going to be able to drive where we need to go. For instance, if you're looking at from a patient perspective, some of the things, I think, you're going to see in the analytics which are just starting to hit the market is doing analytics based on genomic sequencing. So not just taking the person's genome, but actually sequencing it, which is what the real benefit is. So if you know what that is and you can do analytics, you really get an understanding of what's a really good set of protocols for that particular patient. And the same thing with interoperability. Interoperability, if you look for years, and years, and years, it's gotten more and more complex. The tools that are out there to do it are not going to make it to the complex that we have to get. So they've got to apply new tools. But these tools, as we get into a more consumer-centric environment which would be around the patient, these tools must be in a place where they can apply business rules to these things and other functions from a technology standpoint that'll actually give the patient the information that they want to see where they can make decisions, and maybe even see what the cost of some of these things are.

Justin: That's a very good point. Andy, from your perspective at LifePoint.

Andy: Yeah, I think it comes back to quality and outcomes. You know, what's in it for the patient, down to the care you provide to being able to share the things that need to be taking place when they go into a portal and understand the records. And I think that's where potentially, it'll come with [inaudible 00:37:10], as the mobility of devices and understanding the better ways to take care of themselves to prevent them from having to go back into the care setting. So I think it really comes around education, you know, the patient and the consumer.

Justin: And John?

John: Yeah. So when we think about the patient and a customized experience, you really need a system that knows me, right? And you're only going to be able to know me by having the access to my data and me granting you access to that data. And so this concept of consent and how do we think of the care team differently in the future. Because the care team is going to be my wife.

Justin: That's a good point.

John: It might be someday soon my children, right?



Justin: Yeah.

John: And that care team has to extend beyond just the continuum in the traditional acute setting, and be able to facilitate the communication of care in a more customized manner. But it comes down to you have to have systems and applications that know me, and you have to have reimbursement models that incent me. And we're now just starting to see that. And things, as we take on more of that responsibility, and employers take on more of that responsibility in trying to drive down the cost of their care, knowing their employee population, knowing your at-risk population, will become increasingly important. And obviously, analytics plays a key role in that.

Justin: That's a very good point.

Gus: Yeah, and you know, it seems in the last few years, we've been talking a lot about patient engagement. And a lot of the effort when into portals, try to get the patient to connect to the doctor or the hospital or the portal. And it didn't happen. And in my experience, it's because no one really took the time to figure out what would the patient really want from that portal. Maybe you could look at your appointments, but you couldn't make an appointment in most cases. Maybe you could see your medical records, but only so far. So is that effort over? I mean, John, you know at Cerner, do think we have to move on? Do we need a completely different model to engage that patient?

John: No, I think we were early. I think the sophistication or lack of sophistication of the systems to be able to support scheduling your own system, it's known that if you can self schedule your own appointment, you're going to increase the frequency of those folks making those appointments. So it's good for the provider. It's good for the patient. Being able to do a virtual video visit straight out of your portal...I think technology has come along way. Cloud-based computing has come a long way to be able to support new capabilities. You see a lot of them on the floor here that you can embed in your portal experiences to make it more powerful and actually make it valuable to go out there and manage your health, and manage your care through those systems.

Gus: So Ajay, what do you think?

Ajay: So I think one of the areas that we will see where this notion of patient perspective extends to that care team, particularly family and friends...and all of us have had those experiences of needing to care for somebody. Now, you come into these moments where you wish they had done this or that or the other a year ago or a week ago or what have you. This is where, I think, the data and the analytics and the ability to access things through portals or devices that we

are enabling is important. But it also provides a new mindset, a new conversation, a new setting where we would be able to leverage that. And I think that's what will be the catalyst which will drive [inaudible 00:41:03].

Gus: And, you know, [inaudible 00:41:04] to that point, there's some very encouraging developments, I think. And it's over the last few months coming from President Obama, understanding that maybe the HIPAA laws have prevented a use of patient data. And we heard it out of the conference yesterday in the ONC sessions, discussion about...from Lisa Savage[SP], Director of Security, that we need to educate and really have more of a discussion about what security really means. And are we actually overly protective? And HIPAA is preventing people from getting data that's really theirs and they should have. And [inaudible 00:41:40] that's been a part of the problem. And Andy, do you see that?

Andy: Yeah. It's an interesting topic because HIPAA is about privacy, who shouldn't know it, and really not sharing that data. And then you have the total extreme of sharing data with HIEs and other collaborative means, you share with other hospitals and the privacy realm of having that data and the responsibilities that come along with it. And so I do think that over time, folks will probably acknowledge that it, in order for systems to mature, be able to provide that data real-time, some of those things will have to loosen up. At the same time, it takes great responsibility for folks to take care of that data.

Gus: Yeah. it's true.

Andy: Definitely, it's a tricky subject.

Gus: The provider is taking on a great responsibility as being the guardian of this data. And it seems like the government has spent the last few years hitting them over the head to make sure they knew that, about the possibility of fines. But now, the pendulum went too far, didn't it? That we're keeping the patient from the data, and we're preventing them from being engaged because of that.

Andy: Yeah. I think it's [inaudible 00:42:49] challenges. As you know, [inaudible 00:42:50] in the hospital, and you have all the questionnaires to fill out, the caretakers who ask you over and over if you know the different drugs you're on, or the [inaudible 00:43:01] medications, rather. So I think it's something that, over time...and the systems will have a big play in that as hospitals mature, and then be able to integrate that. As you know, if you give a different healthcare entity the ability to have that data in [inaudible 00:43:13] real time to make health [inaudible 00:43:14] point of exchange.

Gus: Craig, do you have any thoughts?

Craig: Yeah. I mean, if you look at trying to present our portal or information to the patient...you were talking earlier that you'd have, what, 6 or 7 or 10 different systems. I know everyone is trying to make one integrated system, but that's going to take a while to get there. So I think it's important from a patient perspective to be able to put a wrap around from a technology standpoint, to be able to tie all these systems together. As healthcare grows, people are becoming larger, and larger, and larger. So hospital systems are getting bigger and things like that. So there's going to be multiple systems out there. So if you want to be consistent to your patients throughout your [inaudible 00:43:58] complete health care system, it's important to put a wrap around the systems and be able to tie them together, and then it'd get much easier for that information to be consistent. You also need to pull in information from other people that may not be in the health care system themselves, whether it be maybe outside labs or whatever. So it's putting a wrapper around, in a way, to interoperate meant all this stuff together that is usable for the patient, which is a big leap.

Gus: And if you do that, I imagine, it helps with software development, and it helps develop new applications. And Ajay, Lenovo, you work in that area. What do you think?

Ajay: Yeah. I think that provides us a lot of input from driving that innovation. So understanding the challenges that the technology is being designed to address is going to be key. And so we have to drive that in. One example would be in system design, we talk about things like critical failure alerts, and we talk about preventive technologies and steps. We do those for the infrastructure itself. It seems like similar types of technologic progress is coming in now, when you bring in the data, when you bring in the analytics, when you create this kind of ability to drive these engagements between the care provider or the care team and the patient. So we are really excited about making sure whatever the device or the data centers spectrum that we need to address, we take these inputs and deliver on those from our perspective.

Gus: Right. Having access to that data, knowing it's secure, and knowing you can have it where you need it. And you can really get...

Ajay: How we can build in that security into the systems, so that the next layers, the middleware, the application, and then ultimately, the user, can rely upon that from the ground up.

Justin: Right. And more innovative applications. And you've seen it. So what I'll do here, because we'll close probably in the next 10 minutes or so...but we'll

take a little card from yesterday, Tom Sullivan, one of our partners here at HIMMS Media, came up with a great question. So I'm going to ask this around the horn. And actually, I'll start with you, Gus, for this question. What's a bold prediction that you might add, that you might throw out there in the next 12 to 18 months that we might see in the industry? So I'll go to everybody. But I'll start off with you, Gus.

Gus: Well, you're going to start seeing people trying, at least - we may not be successful - to apply artificial intelligence into the day-to-day, the primary care visit, and an effort to really take the first step. And I think it'll be controversial. I think it will be protected by many people. And a lot of people don't want to see it. But there's a growing body of people who believe that artificial intelligence does have a role to play. And it will come in not on a grand scale of trying to cure cancer from genomic data, but will come in around the idea of helping to reduce the number of office visits over the common cold. So that's fantastic. Within 18 months.

Justin: That's great. Ajay?

Ajay: So I would agree. I think that's a really good prediction. From a different perspective, what I see happening is the use of various devices and potentially coming together of some of these. Right now, we have 5 or 7 or 10, depending on the type of monitoring you're trying to do. A natural tendency would be to say, "How can some of these be brought together?" And I think my prediction is going to be that in the next 18 months to two years' time, we will begin to see these type of multifunction devices coming in. And that's what we are excited to contribute from a Lenovo perspective. I think that's going to be really exciting for both us, as vendors, but for, ultimately, the patients.

Justin: Great. That's fantastic. Craig?

Craig: I think in the next couple of years, with what the reimbursed models look like today, I think you're going to have to see some more standardization around interoperability, or interoperability standards being pushed by the federal government. Because I think that's really the only way it's going to occur. And with those interoperability standards, you're going to have data, which is beginning to become even more important than it is today. As I mentioned earlier, I think you're going to start to apply some different types of data within the data we're capturing today, whether it be genomics or whatever, that really turned industry on its head, and allow us to make decisions on items we never thought about before that are much more definitive decisions. You may see a much more perforation of digital imaging, so you can actually read images without having to look at them, and things like that that would really

start to reduce the cost of healthcare. Because it can't continue like it is, and it's got to go down. So I think those things will happen.

Justin: Yeah. It's standards. We had it as a big topic yesterday. My second guest yesterday was John Halamka. We talked a lot about standards, certainly Fire came up. But then in closing, I had Aneeshand Farzad come up right after him, and John wanted me to ask Farzad, "Do we need even more regulation?" And then I actually asked Karen DeSalvo as well in closing yesterday about some regulation in that area. And I think everybody's willing to still hold [inaudible 00:49:29] the private sector can actually begin to...

Craig: I can give you some regulation we need to remove. Maybe add some in the right area.

Justin: There you go.

Craig: But we'll leave that for another day.

Gus: How long would that take? Another hour.

Justin: [inaudible 00:49:40] Exactly. Excellent. But I think they're going to wait off, hold a little bit longer. But I don't doubt that we could see some further regulation in that area.

Andy: I'll come on and touch on from a security standpoint. But going from a compliance to a security mindsetted framework, healthcare, the threats are increasing. You hear about ransomware.

Justin: It was also interesting that it happened a week and a half before we came to HIMMS16. The timing was...

Andy: It's prolific. The bad guys continue to keep up the fight, and I think the National Health ISAC, the other information-sharing organizations out there, they started to pool their information together and actually be able to defend and hopefully make the right investments on the right solutions. And if it's cloud solutions that you're particularly looking at, making sure that those partnerships have invested in security as much as the overall organizations that you're at. So I think that's where we're headed, I think. More solutions are obviously, if you go into the cloud [inaudible 00:50:44] to be able to understand the processes of vendor partners or solution providers to better understand what they're investing in in a security standpoint. So that way, you can ensure that our patient's information is secure.

Justin: That's fantastic. John, a bold prediction?

John: You said "bold."

Justin: Bold. Yeah, yeah. Bold.

John: So, I've been thinking about that one. Before I come back to the bold prediction, I want to comment a little on the data interop. Less of a bold prediction, but I do think the private sector's going to figure it out. I think with CommonWell and some of the other formations, I think you're going to see with clients like LifePoint that have so many different systems that are acquiring consolidating, the need to connect those systems is going to explode. And we continue to see consolidation in the market. And I think that's going to drive the private sector to figure out how to do this. I think certainly government can help speed that. But I do see that that's going to incur in the next 12 to 18. As far as other bold predictions, I think the speed at which we move to personalize the genomics space of medicine, just with the technology and the speed of technology that's occurring, I think that's going to happen more quickly than we think that it's...and be more relevant in the clinical care process faster than we think that it may take.

Justin: No, that's fantastic. And full transparency, I'm a co-founder of CommonWell. So, a big supporter of what they're accomplishing.

John: Yeah, absolutely. As are we. Yup. Absolutely.

Justin: So I love it. So I'll kick it back over to you guys for maybe one final question. I've got one question after that, but you have one final question for our group? So we've got six, seven minutes or so.

Gus: Oh, okay. Who's going to win the election? No.

Justin: We did bring that up. Yesterday was Super Tuesday so we couldn't, and we had to put it on the table. But yeah.

Andy: Maybe if Peyton Manning is going to announce his retirement year.  
[inaudible 00:52:46]

Gus: That's the [inaudible 00:52:46] question. We already know what Mitt Romney was talking about. He talked about it earlier today. But I think on the national level, ACA would be a big change. And we still hear it on the...what always surprises me is how you listen to the politicians at the presidential level, they talk about this, and it doesn't seem to faze anybody within this industry.

One way or another, we're going to continue to treat patients. And it always amazes me how little it actually affects the development and the planning of people within healthcare.

Justin: Excellent. So I guess real quickly...what I like to do, also get some color out to the audience. This is a goal to reach 3, 4, 5, 10,000 people out there on a daily basis that's not here in Las Vegas for the conference. So walk around the horn. What's your maybe one or two primary goals and kind of go around the horn here. So for you, John, terrific. You come to HIMSS16. What's your goal?

John: Primary goal?

Justin: Yeah.

John: The first one is always to see where the market's at and listen to the providers, what are they looking for. Certainly you can glean from just walking around and seeing everything, population health's a big topic, and analytics is a big topic. But hearing what our organizations are struggling with and need help with, or where they're excelling, and where we can help excel more quickly, that's really the main goal of HIMSS.

Justin: That's fantastic. I couldn't agree more.

Andy: It's a great place. There are so many opportunities to understand new technologies, not just from a security standpoint, but obviously from a, just a application healthcare standpoint. It's growing every year that I've been to. So it's always exciting, always tons of new things to learn and opportunities.

Justin: Yeah, 43,000 people running around. There's a lot of energy here.

Andy: Indeed.

Craig: From my standpoint, it's trying to find out what the latest and greatest technologies are that are out there. There's always new people, that a lot of them are different names, but same people. But again, it's trying to figure out where our technology fits in what's going on with the market, number one. I know from our standpoint, it's also a networking. Pretty much majority of the people that are at HIMSS are customers of ours. So it's getting a chance to meet with them, and to see them all in one location, and to see where they're going, and where we can help them. And I've been to HIMSS I don't know how many years in a row. I've been in healthcare IT for 35 years. So it's an annual event just like the holidays.

Justin: Exactly. This is my 16th HIMSS16, so I agree. It's been [inaudible 00:55:27] week, and we'll come back together again. Ajay?

Ajay: So I'm [inaudible 00:55:31] obviously in that perspective. This is the first time I'm at HIMSS. Of course, Lenovo team has been coming out here for me. I brought with me some key questions around big data, analytics, and Internet of Things, how are these technologies being adopted or at least looked at from the perspective of healthcare. And it has been a drinking from the firehose type of experience, talking to all the things that are out there. Now, whether they really get into the care domain tomorrow, it remains to be seen, but at least people have put them out there. And we will address the challenges. But I think I'm taking back with me a whole load of new information that'll keep us busy for a while.

Justin: And Gus, what would you...

Gus: Well, when we come HIMSS, on the way, we know we're going to see a lot of technology, over a thousand exhibitors and over 300 educational sessions. So you know you're going to see a lot of different solutions. And what I want to do is I want to hear what the providers, the real people who deploy it, what they really think. And one of my favorite things to do is be at the end of a session, and as everyone's walking out, hear what they're saying about that session. Because, you know, what do they really think when they see it? And that tells us what's going to happen in the next year.

Justin: No, I couldn't agree more. Fantastic. Well, gentlemen, thank you very much for the panel today, Customized Care Everywhere. You guys were terrific. And we'll follow up here shortly. Thank you.

Andy: Thank you.

Craig: Thank you.