



**Improving Health Care Delivery: Innovation in the  
Private and Public Sectors  
The Commonwealth Fund  
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SARAH DASH: Good afternoon. I'm Sarah Dash. I'm Vice President for Policy at the Alliance for Health Reform and on behalf of the Alliance's Honorary Co-Chairmen, Senator Blunt and Senator Cardin, and the Alliance Board of Directors, we welcome you to today's program on the subject of Innovation in Health Care Delivery.

Innovation is one of those things that is easier said than done and today we will talk about the goals of innovation as they relate to health care delivery, how we measure success or failure, and how we can scale up innovations that are working well.

We're grateful to the Commonwealth Fund for their support of today's briefing and with me today as co-moderator is Rachel Nuzum, Vice President for Federal and State Health Policy at the Fund.

Just a couple of quick housekeeping announcements, during the briefing you can Tweet your thoughts on innovation or your questions to the hash tag #hcinnovation, and if you need WiFi, the instructions are on the tables in front of you or on the screen behind me.

So we have a really terrific lineup of panelists today. From the public and private sectors we are going to address the deep questions about innovation in healthcare delivery and Rachel's going to introduce them after some brief opening remarks that she has. So, I do encourage you to look in your packets at their bios. They're really stellar. And also take a look at the reading materials in case you need something to do this weekend. Rachel.

RACHEL NUZUM: Great. Thanks so much, Sarah. And just to add, if there are folks that are following along, if you all want to Tweet, as Sarah mentioned, the hash tag is there and we'll also be taking questions from Twitter so that's an option as well. We can go to the first slide. Thank you.

So we thought that it would be helpful just to start with a quick definition and just kind of lay the groundwork. Innovation is one of those words, as Sarah said, that is tossed about all the time, but just to clarify what we're talking about here, when we talk about innovation we're really talking about the introduction of either a new device, a new idea, or a new method and the adoption of these things into a process. And inherently we think of innovation as good, but I think it's important to keep in mind that innovation really is about change and innovation, in and of itself, is not necessarily good or bad. Certainly we can point to a lot of changes over the course of our history that have felt really innovative but, at the end of the day, didn't deliver results. So what we're really talking about here are what are the opportunities for new ways of delivering care both on the delivery side and the payment side and the coverage side that really show promise to really get us to better results. And I don't think anyone can really dispute that we're currently witnessing a tremendous amount of innovation/change in the healthcare space; in the way healthcare is organized, in the way it's paid for, in the way it's delivered and regulated—all of these

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areas are changing rapidly. Innovation was certainly accelerating prior to the passage of the Affordable Care Act, but the law has clearly served as a catalyst for many changes in the healthcare delivery and payment system.

We see innovation being driven in a number of directions and, as Sarah said, this is really what we're here to talk about today. We know that innovation is driven by the public sector. Legislatively, you all are well aware of that. The way that the Administration sets out rules and regulations is certainly driving change. We all are waiting to have a ruling from our Judicial Branch in terms of potential changes that might be coming down. Innovation is also clearly driven by the private sector. We've got representatives from the venture capitalist firms and investments but also systems and providers who are on the front lines and payers who are really working to make this a reality.

An implicit concept of innovation is the assumption that the introduction of new ideas or changes to the market are being developed, they're being tested, and they're being spread when they are deemed successful. And exactly how this process works and what the role of the public and private sectors are in making this happen is really the focus of the discussion today. So we'll look at both innovative efforts in the private and public sector to move towards a health system that is more patient centered and cost efficient, one that delivers better outcomes. It'll address efforts underway at CMMI and other federal agencies that spur innovation and prioritize a shift towards higher quality care as well as the progress made by the private sector in improving quality and reducing cost through innovation.

I'll come back to the discussion questions that will really drive where we're going but, as Sarah mentioned, we've assembled a panel of thought leaders to really help us walk through some of these issues and, for all of you that have been to Alliance briefings before, you know that the real value is in our discussion with you all so we will save a good chunk of time to really have a conversation. But we really ask them to help us walk through some of these key issues and lay out what they see as some of the most promising innovations that help make healthcare more affordable, accessible, equitable, and high quality or what we, at the Commonwealth Fund, refer to as more high performing.

So just a quick note about our panelists and, as Sarah mentioned, you have the full bio's on your panel and we'll start with Matthew Press. He's the Senior Advisor for the Center for Medicare and Medicaid Innovation. He's going to talk about federal efforts underway to test and measure innovative delivery models and what's happening on the CMMI face.

Next, we'll turn to Wendy Everett. She's the CEO of the Network for Excellence in Health Innovation. She'll talk about recent research focused on enabling innovation to

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improve healthcare quality and lower healthcare costs, which is something that all of us are acutely focused on.

And then, finally, we'll turn to Dan Riskin. He's a surgeon. He's a critical care doctor. He's a clinical informatist and he's what we like to call a serial entrepreneur, and he's going to give us the perspective on the private investment sector, how the private sector is really taking signals and responding to what the public sector is doing, and other exciting things that he sees coming down the pike.

So, with that, I will stop and I will turn it over to Matthew Press.

**MATTHEW PRESS:** Thank you very much for having me. I'm pleased to be here. We don't have a ton of time for our remarks but I'm going to try to cover three areas in the next 10 minutes or so.

The first is the Department's delivery system reform efforts and goals; the second is the CMS Innovation Center and how we are driving towards those goals; and, the third are some early results from CMS Innovation Center payment model tests.

So the delivery system reform effort at HHS is driving towards better care, smarter spending, and healthier people. To achieve these goals, the healthcare system in the U.S. must evolve from a historical state to a future state. The historical state is one that's been marked by incentives, driving volume of care, fragmentation of care, and is really producer oriented. The future state is patient oriented. Incentives are set up for outcomes. It's sustainable and it's coordinated care. The primary payment system in the historical state is fee for service. The future state is marked by a value-based payment system and includes alternative payment models which means alternative payment models are payment models where providers are accountable for cost and quality. Those include things like Accountable Care Organizations, bundled payments, primary care medical homes, and quality and cost transparency, and I'm going to go into some of those models in more detail.

To achieve better care, smarter spending, and healthier people we're focused in three areas. The first is how we pay providers and improving the way we pay providers; the second is the way care is delivered; and, the third is the way information is distributed. In January, Secretary Burwell made a historic announcement about that first area, how we pay providers, in which he announced goals that by 2016, 30% of Medicare payment would be with the alternative payment models, and by 2018, 50% would be made the alternative payment models. You can focus on the dark blue circles there. We've already made tremendous progress. Only a few years ago, in 2011, we had zero percent of Medicare payment in alternative payment models. We're now up to 20% and, in the years to come, we're going to be driving further towards those goals of 30% and 50%. But the

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federal government's not going to be able to do this alone and, to that end, HHS has launched several efforts to engage with the private sector and states to help move towards these goals. Most notably, last month we launched the Healthcare Payment Learning and Action Network, which is an ongoing convening of stakeholders representing every key group—payers, providers, purchasers, states, and consumers—in which we can align on the goals around alternative payment and also identify and align around the best practices to achieve those goals. And that's actually just one example of how CMS is engaging with the private sector.

So the CMS Innovation Center is a major force in the effort to reach the alternative payment model goals. We were created by the Affordable Care Act to develop, test, and implement new payment and delivery models and there are three scenarios in which a payment model test can be deemed successful and the Secretary has the authority to scale that payment model. The first is where quality is improved and cost is neutral; the second is quality is neutral and cost is reduced; and, in the best case scenario, is that quality goes up and costs go down.

In the past four and a half years, the Innovation Center has launched 26 new payment and care delivery models that map to the focus areas for delivery system reform. And I'll go into a little bit more detail but this is just giving you a broad overview. We have a portfolio of ACO programs, Accountable Care Organization programs. That includes the Medicare Shared Savings program right out of the Center for Medicare. We also have a Bundled Payment for Care Improvement program. We have a few primary care transformation programs and also the state innovation model, which is working directly with states to enable them to implement care redesign and payment reform within their states.

Participants in Innovation Center models are literally all over the country in every state and some territories. And so, in the remaining few minutes I just want to touch briefly on some early results from some of our payment models. So, ACOs, for those who don't know, Accountable Care Organizations, this is a payment model where a group of providers is held accountable for cost and quality of care and in the pioneer ACO program, if there are reductions in cost and quality targets are met, then the providers are able to share in the savings with CMS.

The first two years of performance of the pioneer ACO program have been, I would say, remarkably successful. Quality has gone up across a number of metrics. Costs have gone down. Combined with the Medicare Shared Savings program there have been 372 million dollars in program savings in the first two years of those programs. There's currently 19 ACOs in the pioneer ACO program, many, many more in the Shared Savings program and this is a model test that – these results are based on the first two years of the model test.

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Next is the Comprehensive Primary Care initiative, and as a primary care physician this is a model I'm particularly passionate about. This is a multi payer model, which means we convened private payers to participate in this model in a similar way with providers as CMS is participating and that way is enhanced non-visit based payments to about 500 primary care practices across the country and a robust learning system that allows these primary care practices to transform the way they deliver care. We just published first-year evaluation results on that Comprehensive Primary Care initiative and that report, which you can access on the Innovation Center website, showed that, in comparison to a matched control group, practices in the Comprehensive Primary Care initiative total Medicare expenditures, parts A and B were reduced by 2% which is almost as much as the enhanced payments made to those practices were, so in its first year the program was almost budget neutral which I think is quite remarkable since, as we know, transforming the way care is delivered takes some time. That reduction in expenditures was produced through reduced hospitalizations, ER visits, and readmissions.

The last model I want to mention is the Partnership for Patients, which is a large national quality improvement effort in which thousands of hospitals were engaged to reduce hospital all-cause hospital harm which are essentially medical errors in hospitals along with readmissions. That model in conjunction with other forces have led to historic reductions in both of those outcomes—all-cause harm and readmissions—and these are data from ARC that's extracted from charts, so really gold standard data showing over the past handful of years dramatic reductions: 17% reduction in hospital-acquired conditions, 50,000 lives saved, 1.3 million patient harm events avoided, and 12 billion dollars in savings.

So, moving forward in 2015, the Innovation Center is continuing to drive towards these goals, both the alternative payment model goals and the broader delivery system reform efforts seeking better care, smarter spending, and healthier people. We're continuing the implementation of current models as well as new models. Just within the last few months we announced two significant new models. One is the oncology care model and the other is the next generation ACO model. We're also monitoring and optimizing results, evaluating and, based on evaluation, considering scaling of these models, as well as integrating innovation across CMS. Thank you very much for your time.

SARAH DASH: Great. Thank you so much. Wendy.

WENDY EVERETT: Good afternoon and thank you very much for this special invitation to be here. I'm here today because NEHI is a national health policy institute that really focuses on speeding the adoption of valuable innovations through policy change and that's policy change that's based on evidence. So, the important word here is

valuable, and one of the things that is critical to us in analyzing these innovations is to determine the degree to which they improve patient outcomes and they reduce costs.

We work in five major areas: ensuring the responsibilities of medicine; patient adherence; reforming payment systems; improving healthcare delivery services across the board; advancing technology, particularly technology in the service delivery area; and, promoting health and wellness at the community level.

So my job here today is to kind of be the Lucy in the Peanuts comic strip, so I really agreed to come and talk about all the crabby things that are barriers to adoption of innovation and I will do that.

But first, I wanted to go through three very quick examples of what we can do and what levers we can use to speed the adoption of innovation. So payers, providers, policy makers, patients all need and deserve really good information and evidence that an innovation actually works and is valuable. So, one of the things that we do at NIHI is to conduct sometimes multi-year research efforts to do that. This is an example of our looking at remote monitoring in intensive care units, particularly intensive care units around the country that do not have intensiveness staffing. What we found in looking at both an academic medical center and two community hospitals in a 3-year randomized controlled trial was that the use of EICU or remote monitoring actually decreased mortality by 30% and saved the academic medical center about 20.4 million dollars net in the first year. So, these were important data for folks who were then trying to evaluate whether or not this was a valuable innovation.

Second, in addition to knowing the value, you really need to be aware of these innovations in order to adopt them. So we've established something called the Global Lab for Health. It's on a publicly accessible website and it's an interactive repository of curated service delivery innovations. So what we do, in an open source way, is to have people post their innovations then do peer to peer evaluations of them and, finally, independently with a firewall, to go to the users and actually vet and validate what those results were. So, if you have an opportunity, I would urge you to go that.

And third and finally, we really believe that state health reform has the potential to speed the adoption of innovation by shifting, as Matthew just described, payment from a fee for service to alternative payment models, and that this will help speed that adoption of innovation because it puts the pressure on the providers to be able to deliver the best possible care under bundled payments or some other alternative means. Right now Massachusetts, Vermont, Maryland, and Oregon actually have passed legislation to enable the states to try to encourage innovation. There are 12 other states that are contemplating or in the process of passing this legislation. I'm on the Health Policy Council in Massachusetts and on this commission we don't have rate regulation we have,

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what I call, a velvet fist in an iron glove. But we're charged with promoting the adoption of new delivery models that will enhance transparency and we have set aside 160 million dollars to help the community hospital use innovation to try to transform them so that their quality is higher and their cost is less.

So now let me move on to barriers, to dissemination and what we can do about them. From the IOM report several years ago we know that it takes an average now of about 17 years for an innovation to be adopted in the delivery system. We went through our Global Lab for Health and analyzed the 60 strongest innovations to try to dissect what those barriers were and what we might be able to do about them. As you can see here, you could roughly cluster these into licensing and credentialing, things that are related to regulation, and then things that are really directly driven by process. So I'm going to leave out payment because we've covered that to some degree and really focus instead on regulation.

A good example of this is the degree to which cross-state provider licensure and credentialing has really hampered the spread of remote monitoring. So right now, if you are a physician, an advanced practice nurse, and you're in one of the New England states, in order to really bring particularly a for-profit innovation or a company to scale you have to be licensed in at least 7 states—your state and the 6 other ones that you want to practice in. Not as much of an issue in California, but for the rest of the country this has really been a big barrier. So fortunately, the American Telemedicine Association, the Bipartisan Council here in Washington, has worked with the Federation of State Medical Boards to at least, as an interim measure, get a level of reciprocity in place so that it's less burdensome to folks. There is potential FDA regulation. We can arm wrestle about whether this will come to fruition or not, but with the new Administration I'm not willing to put any money on the table yet that says the FDA is going to consider regulating mobile apps, certainly considering them as a kind of device.

So, finally let me just finish up. Rachel talked about change. We all know change is really, really hard so we can love something, we can love it in the abstract or the idea, but when it comes down to actually adopting these and changing the way you practice it's really hard. So there's a great brand called Life is Good. This is a picture from the 1950s and sometimes I think that life was good then and it's been really hard for us to change. Two years ago my husband, Patrick, got quite ill. We were in and out of the hospital for about 6 months and as far as I can tell, from the time I had trained in 1972, the two things that had changed were the air mattresses were really better and the nurses used computers on occasion. Beyond that nothing had changed in roughly 40 years. So I think that we really are going to have to push to get adoption in that arena.

On the physician side, particularly in the Tele ICU project that I mentioned a little bit earlier in my remarks, as we went through that in the community hospitals, the

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community physicians would go into an ICU room of a patient they were caring for and there are cameras in each of those rooms so that the room monitoring center can actually see the patient 24/7 every second and identify early changes. There was such a threat to physician autonomy that they would walk in the room, take their jacket off and hang it over the camera so that the physicians in the support group could not see what they were doing and this was two years ago. So we have a real challenge ahead of us. I said I didn't volunteer to be Lucy but I'm here and I think it's important that, as we move forward, as much as I love this cartoon, I think it's really time for that hound to take a risk and step up to the plate and do things that will really encourage rapid change. Thank you.

SARAH DASH: Great. Thank you so much, Wendy. And now we turn to Dan Riskin.

DANIEL RISKIN: Okay, thank you so much. Rachel's here. I really appreciate your inviting me here. It's a privilege to be able to speak. I've got 9 minutes to talk about healthcare innovation in the private sector so this should be no problem.

I build products and build companies for a living so this is the focus is what recent federal influences have done to private sector investment and innovation and then, the second goal of this discussion is to talk about opportunities to better enable healthcare innovation with the focus being on what's actionable for the people in this room—what can you do to support safe and effective innovation in the private sector.

So, the first thing to note is federal influence is only a portion of what's driving innovation in the private sector. Innovation is not necessarily around payment models, it's much more commonly around technology. What we're doing is we're following technology trends, we're working with the infrastructure we have so we watch Cloud computing, we watch big data analytics, increase in data availability and much of what the federal government is doing in terms of payment model innovation and infrastructure creation and that's what gives us, as the entrepreneurs and the companies that acquire us, the ability to innovate and the ability to try to predict at least two to three years ahead of where the puck is going to be.

We live in a shifting landscape. Recent federal trends and initiatives have truly changed where innovation is happening in the private sector. This is being reflected in venture investment, in private equity, and in public market investment and this is effectively what we're working with. We are vested in based on where the exits and acquisitions are, so we try to create value where it can exist.

The traditional areas of investment are continuing so we watch Pharma, Biotech, and MedTech but we're watching entirely new areas of investment come to the fore. This is based on both technology trends as well as federal government influence and it's analytics, it's consumer engagement mobile, and what we're seeing is rapid growth, in

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some cases exponential growth of spending and investment and this is just the most recent figure of what's happening. Last quarter of last year was more spending on healthcare IT than the entire previous year put together.

So what we see in the overall market as of 2015, most sectors are growing in terms of healthcare investment. Devices face regulatory and tax headwinds but there's outsized growth in analytics and it's largely due to federal initiatives: data availability, a push toward data use, and incentive money. So effective federal subsidization of technology firms and subsequent acquirers and the utilization in the health systems. We're seeing huge changes in valuations of these healthcare IT companies and very few exits, a real question mark as to where sustainable growth will be sustainable purchases. And so puts a big question mark on the sustainability of these investments.

So, the U.S. approach should remain cautious and this is the transition in the talk toward how we look at this at a national level. Innovation is not necessarily good. I hear every day situations where healthcare IT, which has run through from idea to testing to implementation in a period of months, where it causes harm. With that said, there's no national overview of where harm is happening and so we don't really know how dangerous this is. We also know that it's causing great benefit. We know that it's changing outcomes. We know that it's, in some cases, changing costs. The intention shouldn't be to provide incentive and regulatory support for innovation, it should be for safe and beneficial innovation, influencing outcomes and costs as well as the little-discussed patient experience in the system.

So let's talk about national strategy. We've created something over the last few years which is incredible. We've focused on infrastructure in healthcare technology: data acquisition and availability of data. This is similar to the federal highway system that we created in the past, and what happened is the U.S. invested, through legislation and subsequently through subsidization of contractors, to build a national highway system. These contractors were told two things. They were told make the roads the same size and make them connect. Those are very important efforts. In the healthcare data infrastructure side, we're talking about creation of value-based payment models—electronic collection of data, measurement of quality infrastructure—these are really important. But, as auto innovation followed road availability, our hope is that the federal effort to create infrastructure will create an entire innovation landscape of analytics and population health and consumer engagement. With that said, that hope has not been realized. The payment models have shown early successes, but the other infrastructure—EHR usability, quality measurement, interoperability—are problematic. So where we insisted that the roads be the same width and we insisted that they connect back when we created the federal highway system, we have not done that in electronic data capture. We have data being stored in silos. We have firms benefiting hugely from data lock-in, and a big discussion nationally of where the federal government role really is. We're creating

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infrastructure, should we be requiring interoperability? How should we be viewing quality? How aggressive should we be?

So, I think that – I like to end with recommendations and this hopefully stimulates discussion. We'll see how controversial these are. But on the payment model side it's been incredibly powerful. No one wants to go back to fee for service. Value-based healthcare, however we approach it, is clearly important and we will learn over time how to define value-based healthcare as we try these different models and remain innovative.

The incentives to improve quality of care are critical, on the other hand, the regulation that defines and supports infrastructure has been really problematic. So the first area that I'd make a recommendation on is quality measurement. We have quality measurement right now that has several critical failures. We don't require accurate quality information be captured so we see statistics out of an electronic medical record of 80% accuracy of understanding whether someone has diabetes, 50% accuracy of understanding whether they have cancer, and even lower for certain other conditions. We get these cohorts of accuracy that we're just failing to accurately measure. The other area of quality measurement is are we really innovating on accepting quality data, using quality data? There's so much opportunity here to create an infrastructure by which people could accurately measure quality and the quality measures could be tied to cost and outcomes. I think that we have opportunity if we refine our course on that.

And then the course related to interoperability is critical. So, we are talking about right now, through meaningful use and other efforts, trying to mandate interoperability but very few people really get into the weeds enough to understand what we're requiring. Right now we're talking about summaries of information. We're talking about problem lists and flowing those out of the EMR. With that said, that's a tiny portion of what's captured in the electronic medical record. We talk sometimes about 20% being structured and 80% being unstructured. Most of that content that's used for analytics will never flow out based on our current interoperability recommendations, will flow out a list of problems and a list of medications, and will hold all that really important information about the non-compliance and homelessness, and smoking and these areas that will really drive resources to high risk patients and drive population health. That information there's no discussion of how to flow that out and there's no discussion of whether the federal government should either mandate or regulate that. So those are areas that really require refinement and greater discussion to do well. I thank you.

**SARAH DASH:** Terrific. Thank you so much to all of our panelists for their fabulous presentations, and now we have come to the question and answer portion of the briefing, so if you have questions and you would like to come up to the mics on either side of the room, or fill out one of the green question cards that's in your packet and hand it to one of our staff members, they will bring it up.

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So while folks are getting organized, I guess I'd like to kick it off with a question for the panel. So and some of our discussion questions are back up on the screen. So how should these various entities, be they the federal government, the states, the private sector—how should they and how do they identify promising innovations? What's the threshold? Wendy, I believe in your slides you had mentioned a 20% decrease in cost or increase in access. I'm wondering if our panelists could comment on what the thresholds are for successful innovation, and then conversely, how do you decide what's no longer successful innovation or what's a failure and whether or not that should be discontinued. So, Wendy, do you want to start.

WENDY EVERETT: Sure. Thank you. You know, it's very interesting, having gone through the experience of setting up the Global Lab for Innovation, because so many service delivery systems around the country have wonderful kind of home grown innovations, but there isn't a good path or vehicle to get them out and shared with other institutions. I think to some degree the SIM Grants have helped that way but then you have to go through the grant process. So, sorry it's a somewhat vague answer, but I think it's a hard thing to do.

The companies, the vendors, certainly it's much easier to find the innovations because they want them found and harder to evaluate them. We had a long discussion at a meeting last week with a group of investors who were complaining that there were too many pilots and that every time there was an innovation Kaiser had to do a pilot, then the University of California San Francisco had to do a pilot, you know, that they were tired of pilots. And, at the same time, the companies, the entrepreneurs came back and said look, you know, you won't adopt us, you won't purchase us unless we give you the results of three pilots. So I think we're stuck at the moment in terms of having a good kind of national highway, as Dan said, to identify these innovations and then evaluate them and help their spread. They're kind of all stuck inside the institutions that are using them.

MATTHEW PRESS: So I would add to that, every payment and care delivery model being tested at the Innovation Center has a learning system that's part of the model. And what that learning system allows is for learning to occur between participants and the model between providers. So if hospital or physical group A has found success in some internal innovation, we support their sharing of that innovation with other participants in the model. We also give the participants in the model access to experts. So that's one way that we try to facilitate that dissemination of innovation. I mean, for our own models, success is statutorily defined, as I mentioned earlier, but I think in terms of fermenting innovation within our participants, our goal is to give them the incentives and the tools to do that innovation, again to allow our learning system to help them disseminate those innovations.

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DANIEL RISKIN: Great. On the private sector side, I think that in mature market segments like Pharma and Med Device, we know exactly how to identify those innovations. They get brought out. We know how much money it's going to cost to go through trials. We know what the steps are. We know what the risks are. Very well defined. On the immature side you look at clinical analytics, other forms of healthcare IT, we're really not sure what we're doing. The large health systems are trying to figure out what to buy. We watch company after company be created in population health – very hard to measure success. We're using intermediate markers because it takes so many years to get to cost and outcome. And so what we see is relationships tend to drive which innovations get purchased. We see there aren't enough studies to understand what works and what doesn't. There, maybe, isn't even enough scientific maturity to evaluate in the intermediate levels, so I'd say that we have a lot of work to do on the private sector to define safe and effective innovation.

RACHEL NUZUM: If I can just ask a follow up and, Wendy, maybe you can start us out. One of the challenges is the downside of being in this time where we have so much innovation kind of happening at the same time and there's been a lot of question about how you actually are able to evaluate a specific innovation or intervention when so much is actually changing at the same time, when you've got so many variables and so many demos and so many pilots and, you know, so many different payment change signals happening as well as this kind of influx of consumer facing IT and consumer engagement strategies. So can you each talk just a little bit about kind of your approach to really being able to evaluating innovations kind of in this awareness that so much is changing at the same time?

WENDY EVERETT: That's a great question, Rachel. I think for us, and I'll reference Dan's comments as well, and think more about the service delivery side and less about products because I think whether a drug and a device has to go through the FDA and gets a particular level of evaluation before it really gets into the delivery system. For the service delivery system, the HIT, and the process changes we've really been able to isolate the effect of the innovations separate from the environment. Now you can't always do that perfectly but I think that payment reform, in particular, is moving in the right direction but it's no speed demon. And I think that we've been able to look at, several years ago we set out to look at computerized physician order entry and, at that time, only 13% of the hospitals in the country had it. So we were really able to find a hospital – a set of hospitals that did not have CPOE implemented, go into the hospitals, audit 4200 charts, look at the level of medication errors, and then compare that to a group of hospitals that did have CPOE.

So I think if you have a kind of light but rigorous methodology you can provide normal evaluation research principles and come up with some pretty good data, data that is good

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enough to be published. I would add to that, though, the one thing I'm looking forward to is kind of our country's acceptance of the use of social media to disseminate these evaluation results. It still takes a year to 18 months to get any of these studies published in a journal and so you're close to three years out from having decided to evaluate whether or not they improve quality and reduce cost. And if we can get to a point where we can find a much faster vehicle for dissemination of results, good or bad, that would be terrific. Matthew, did you want to comment?

**MATTHEW PRESS:** Sure. I mean, that's a great question that's particularly applicable to what we're doing since we, as I said, you know, we have dozens now of innovative payment and service delivery models going on across the country, sometimes in similar parts of the country, so I think the key for us is, as Wendy said, rigorous scientific methods. All of our models are evaluated quarterly and annually by independent evaluators. They are on the quantitative evaluation side, which is looking at quality metrics, utilization cost, they're using the advanced statistical techniques like difference and differences, regression analysis to isolate the effects of the particular payment model in comparison to a matched control group. But then they also do a robust qualitative evaluation so there the evaluators are doing site visits, surveys with providers and beneficiaries, focus groups to add some nuance to interpreting those quantitative results. So I think that scientific rigor and mixed methods are really crucial in trying to isolate the effects of a given innovation.

**SARAH DASH:** Great. Thanks. Do you have a question?

**DR. CAROLINE POPLIN:** I'm Dr. Caroline Poplin. I'm a primary care physician. I have a question for Wendy and a question for the gentleman at the end. My eyesight's not that good anymore.

Wendy, you said you look all around the world for innovations and I was curious to know if you had found anything overseas like in the OECD countries where their model is still predominantly fee for service, they have much better outcomes at much lower cost. And my question for the gentleman: from the private sector, I work with a lot of the new high tech innovations and there's no question that for medications in the bio med department you have great new things for hepatitis C, pretty good things for auto immune diseases like inflammatory bowel diseases, and for cancer—eh, some are good and some are sort of marginal. They're a little bit better. But all of these things come at tremendous cost and the idea is you're supposed to improve quality and reduce cost. The same is true for electronic medical records. Very expensive and, in this case, the benefit is hard to measure. Let's put it that way. So those are my two questions.

**WENDY EVERETT:** Thank you. We are looking outside the OECD countries to date and in the next year we will start to spend more time in Europe, but we've mostly been

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looking at China and India. And what comes out of that, that we're creating a process to reverse engineer how these innovations can be used in this country, are innovations that are primarily smart phone based. So what India and China have done extremely successfully, India in particular because of the extraordinary penetration in rural areas, is to take smart phones and companies have come up with adaptive probes that can be put into the smart phones. So if you have an ear infection they essentially have a little otoscope that can be put into the cell phones, captures the data, sends the data, transmit it wirelessly, then to an expert in the city who can do a diagnosis and prescribe the treatment sometimes directly to the patient and sometimes to a mid-level provider. Believe it or not, they're now studying a new trial of a colposcope that is attached to a smart phone. So these are people in rural areas who've never had access to care. There's no reason that we couldn't have the same thing in this country other than figuring out how to introduce it.

The second thing that I think we find in developing countries is a much broader use of sensors and sensor-based technology so that people, again, can use wireless transmitting devices that are sensor based to get expert opinions from a considerable geographic distance and provide a modality for both diagnosis and treatment, diagnosis, treatment, and in many instances, self care and self adjustment. Dan.

DANIEL RISKIN: Thank you, Dr. Poplin. I appreciate the question. I agree with you entirely and share your discouragement over the massive expense in EHR's and the questionable benefit. In fact, I think we've overly focused on ERH's and not enough on analytics. With that said, I'd like to answer this by talking about two groups and what we can do better. One is the companies and two is the federal government.

The companies, some entrepreneurs, some executives, focus very much on reducing costs, so I will not start a company unless it reduces costs in the health system. But that's by far the minority. Many will do our fiduciary duty and actually grow a company and the value of the company ignoring costs and that's – you can understand why that would happen.

DR. POPLIN: Sure.

DANIEL RISKIN: They will try to create as much enterprise value as they can and be acquired or enter public markets for the benefit of their investors and the rest of their board. I do believe that for sustainability in healthcare we need to focus on costs not just outcomes and I think that will increasingly happen as we transition to value-based healthcare, or at least I hope it will.

On the federal government side, I think that there's a lot of money going toward collecting data electronically, toward measuring certain things electronically; that doesn't

necessarily translate to lower costs, so the incentives being given are not necessarily to lower costs. We subsidize, the federal government subsidizes collection of data electronically and that does increase costs throughout the system. It also requires collection of quality data without figuring out that leap from that intermediate marker toward actual costs and outcomes, so we subsidize collection of quality data but we don't say actually that data, that information has to be accurate or tied to outcomes. So I think that we can take that logical leap now, I hope, and move toward, okay, you can innovate and we'll even subsidize or, in some way, change our payment model to support your innovation, but you have to reduce costs and ideally improve or at least keep level outcomes. I think that hasn't happened yet but I have great hope that it will.

DR. POPLIN: Thank you.

WENDY EVERETT: I wanted to take a moment, if there isn't anyone else at a microphone, and just go back, Dan, to your presentation and your recommendations because I think this is a topic very germane to this audience.

I was quite taken by your last recommendation, your focus on quality measures and I think right now, as we at NIHI look at the multiple ways we can evaluate innovations and provide guidance to people about how valuable they are and whether they should be adopted and how the kind of overwhelming tsunami of quality measures that are out there put forward by many, many, many, many, many different organizations is not just staggering but really daunting. So if you look at NQF, NCQA, can go through every alphabet, I think people are getting to the point where there's almost an adverse reaction to quality measures.

So my question to you is how do we bring sanity to the field of quality measurement, but even if we were to only look at HIT-enabled innovations and help people meet a reasonable kind of cadre of important quality measures so that they can have a little red badge of courage as they either go out into the marketplace or work with the government through CMMI?

DANIEL RISKIN: Thank you. I appreciate the question, Wendy. We're having a little cross panel chatter here, which is great. So this quality question is so interesting. The people that I know that work in the organizations in CCSQ, ONC, ARC, NQF are dedicated people. They are putting in huge effort. They are doing their best to create these intermediate markers for cost and outcome. That's the desire. The thought being, if you have that intermediate marker you've got something to hit that will ultimately tie to cost and outcome. I think we've got a couple of problems with our approach. One is, this has been a little bit side tracked by efforts from industry and health systems and others to make easy quality measures. So we talk about process measures and other things that are easy to measure. This has been in this mad rush to get as many quality measures as we

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can. We're saying, okay what's feasible? I think that's pretty crazy myself. What does it matter if it's feasible if it doesn't tie to cost and outcomes? What does it matter if I measure did this health system always tell the person on discharge to quit smoking and then they enter that in the 10-page discharge summary and it didn't matter if they were smokers or not, why is that a good quality measure? So, we do this over and over again.

I think we need to go back to the original intent that we had 15 years ago when we started this work of quality measures need to tie to cost and outcomes. It doesn't matter how hard or easy it is. Doesn't matter if the EHR can capture it. It doesn't matter if the doctor is going to click it off. Let the vendors figure it out. Let the technologists, the engineers, figure out how to get at it. That would be the recommendation. Make it hard and let us figure out how to hit that target.

The second recommendation is around accuracy. Why would we put out quality measures and say you have to report on this, but we never validate whether they're accurate or not? How can that possibly help? So we're having the doctors check off boxes in the HR, they might do it 20% of the time, they might do it 50% of the time, we're flowing that through to an analytics program that reports, you know, that's not that useful unless it's accurate information.

RACHEL NUZUM: So I'm going to turn it over to Matt. I just want to put my former senate staffer hat on and push back a little bit on Dan. I love the idea of tying the metrics to the actual outcomes that you want. My guess is that no one in this room has heard from a physician group or anyone else saying these metrics are too easy to achieve, and there's too few of them and so there is a real tension there between needing to push towards metrics that are really meaningful and yet being able to kind of meet providers and systems at a place that makes sense, that is do-able for them. And then there's obviously kind of the political support that is really critical to move that, but I want to give Matt a chance to answer because I know that HHS has really been grappling with, you know, what they can do to kind of help streamline but also move us to a place where the metrics are really meaningful.

MATTHEW PRESS: So, I'd make a couple points. Number 1, quality measures, as this rich discussion is evidencing, are paramount of importance to us, as I mentioned, beginning, you know, quality is part of how every new payment model is assessed. And there's a recognition, I think, that everyone shares including at CMS, that quality measures should be accurate and they should not be burdensome to providers. So in terms of accuracy, quality measures do go through an extensive vetting process but there's room for improvement, and in terms of integrating quality measurement into the clinical workflow, that's absolutely a priority. And so I think one key in getting to that point is narrowing in on the core measures of quality that we think are best. And then, number 2, aligning those measures across programs and across payers. And, again, I'm going to mention the Healthcare Payment Learning and Action Network that we launched last

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month, one of the tasks that that network will almost certainly take on and actually some folks who are involved in it have already begun this process, is aligning quality measurement across payers. So I think it's an active area. It's a priority area and I think we're making progress.

SARAH DASH: Thanks. I do want to come back to this question of aligning quality metrics across payers in a moment, but we have a question at the mic.

KATIE: Hi. I'm Katie Allen for Congressman Black. This is kind of a half-baked question so I apologize if I'm rambling a bit, but this is focused largely on innovations in Part A and Part B and I guess Part C also has a lot of innovations and pilot programs going on in it and arguably it's a much more nimble program where some of these things could be implemented without regulation and some of the resources we're putting into these alternative payment models, and there's also kind of an inherent incentive in Part C to both focus on lowering costs and raising quality.

So, I'm wondering the reasoning, maybe, behind putting so much focus on innovations in Part A and Part B and not so much in Part C, and if you could discuss any of the innovations that are going on in Medicare Advantage right now. Thank you.

MATTHEW PRESS: So there are statutory limits – so first of all I'll say that Medicare Advantage is incredibly important and a significant portion of Medicare beneficiaries are enrolled in MA plans, so absolutely important. And those payers are also at the table for this Healthcare Payment Learning Action Network so again, trying to get at alignment across public and private sectors including MA payers.

There are statutory limits on what Medicare can dictate in the way Medicare Advantage plans contract with providers so there's some limitations there. That said, the Innovation Center has announced publicly and put out a request for information about potential health plan innovation model tests. So that's an area that we're actively pursuing through the Innovation Center as well.

SARAH DASH: And for those of you who may have missed it, the Alliance held two briefings on Medicare Advantage in December and then again earlier this year and we addressed some of these questions about the differences between Medicare Advantage and fee for service and some of these newer delivery system models. So if you're interested in pursuing this question you may want to check that out.

DANIEL RISKIN: I have a quick comment on Medicare Advantage. The incentives, the drivers for innovation are similar to the ones that we discussed earlier but actually it's a very nice area to innovate. There's clear reimbursement associated with successful approaches there, so in the private sector I've seen quite a bit of effort toward Medicare

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Advantage, in fact the last company I billed we were taking 100,000 identified documents a day, processing these, getting out 10,000 features per patient and actually getting a very good risk assessment and then ultimately risk adjustment and that helped in downstream analytics. So we see a lot of innovation in private sector based on the very clear payment model associated with Medicare Advantage.

RACHEL NUZUM: Great. So, I'm going to shift us a little bit. So we've got two different questions that are really focused on kind of the specific roles of providers and the training and education of providers and really kind of prepping them and equipping them to kind of operate in this new landscape.

The first really touches—so I think we probably deal with them slightly separately, but the first really goes to, I think your point, Wendy, and your point, Dan, about just the inherent limitations of scope of practice and regulation that really makes some of the innovations such as the sensor, such as the remote telemonitoring, frankly, a lot of that kind of high tech things that are pretty cool right now, makes it a little bit harder to roll out broadly. So what are your thoughts on what can be done at the federal level given that this is the audience that we have here and we know that a lot of the authority on scope of practice does reside at the state level but at the federal level what can be done or what can be considered to really address this issue around making it easier for providers to practice in that way?

WENDY EVERETT: Dan, do you want to start and then I'll follow up?

DANIEL RISKIN: Sure. So, I think the question, if I understand it, is how the federal government can encourage providers to incorporate new sets of data such as sensors and the things that patients are bringing. I think that it would be very hard for the federal government to influence the behavior of providers short of changing their payment. With that said, the last discussion that I was in at a congressional level, we brought up what would be disruptive and what came up was if the patient actually had control of healthcare spend then the customer that these technology companies and these providers are working for is no longer the federal government but rather the customer is the patient. That would actually change the behavior of vendors and providers to meet the needs and requirements of the patients which might well be I want you to see what my glucose tracking is on my machine rather than just have me tell you or check in your office. I want you to see my blood pressure at home. I want you to see all the trends that I'm measuring with my quantified self devices. This is an active area of investigation for the large tech companies like Google and Apple in Silicon Valley and we're rolling these things out globally but I would say the federal government of the United States is just a little bit behind in the approach. With that said, I think there's a lot of interest and excitement in having groups like CMMI looking at payment models. It's just where we want to be.

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WENDY EVERETT: The only thing I would add to that is that kind of in my very optimistic moments I think there are many mechanisms that the federal government has to influence state level behavior and you know, you're right, Rachel, as you were framing the question, much of the regulatory processes around scope of practice occur at the state level. I'm sure many of you saw a week and a half ago that the Texas legislature has decided that physicians can only see patients face to face. That's all they will allow and that's all they will pay for. You know, that's going back to the 19th century when it comes to the use of, you know, just even face time. Stanford now only does 70% of their patient visits real time, 30% are just e-visits, and they've saved an incredible amount of money and opened access for patients because physicians are not seeing patients that they don't really need to see.

So what can the federal government do, either through the Medicaid Match, through the Bipartisan Council, through some set of mechanisms that may be mysterious to us on the panel but using your imaginations and your positions, what can the federal government do to really bring the states into a modern set of practice standards?

SARAH DASH: Okay, we have a question at the mic.

AUDIENCE MEMBER: Actually two, but Matthew. It's great the CMMI is working on all these innovations and that we've got all these measures to determine outcomes, but there's always a question with regard to the innovations whether they're going to be scalable and I seem to recall someone from CMS—and you may not know the answer to this question—but I seem to recall the IT person at CMS at a MACPAC meeting, probably at this point, or a MEDPAC meeting—MACPAC meeting—maybe three years ago saying that T-MSIS was about to launch and that all this data that the states were sending to CMS would be immediately usable and interoperable. The states would have access to the Medicare data and there'd be case management data, all usable by the states for feedback and in order to improve outcomes.

I'm not sure where T-MSIS is, but I'm pretty sure I didn't hear an announcement that it's been implemented and it's now three years past that time. T-MSIS is a management information system which would supplant the existing management information system. The second element of all that and the second – sort of the second question, is the other side of multiple innovations going on at the same time, besides not being able to isolate the impact of individual innovations, is that it reduces the amount of resources available for each innovation. Now there's an IMD – there's a behavioral health demonstration that Congress passed a couple of years ago that they limited to two years because of cost. It was due to expire in June. I know that in at least four states now the states have terminated the demo because they've run out of money. So how do you resolve the

tension between multiple projects at the same time and limited resources, and that's also for Matthew and for Daniel. Thank you.

**MATTHEW PRESS:** Okay, thanks for the questions. So in your first question, as you point out, data are essential in assessing the impact of these model tests and I think you're also accurate to point out the challenges in obtaining Medicaid data. I'm not an expert in T-MSIS in that process but I know that the research and evaluation group at CMMI is addressing that and spends a considerable amount of time working through those issues, so it's very much top of mind for them. I would add, though, that claims data are not the only source of data to evaluate the impact of a program and, as I mentioned before, we have not only extensive qualitative data that we're collecting that I mentioned but there are other sources as well of more quantitative data. But I think that's a good point.

And the second question, yes, there are tradeoffs. With a limited budget there are tradeoffs, but that said, I think we recognize—I'm assuming the other people on the panel will agree—that part of innovation is failure and that not everything we do will work and so we need to pursue a broad portfolio of model tests. And I also think that different providers have different levels of readiness for alternative payment models and have different needs when it comes to alternative payment models. So I think it's important for the Innovation Center to create different swim lanes within the alternative payment model pool for providers that meet their needs.

**SARAH DASH:** Do you have something to add?

**DANIEL RISKIN:** Yes. I think you had also asked me to comment, from the private sector side, happy to do. I think I agree completely. You have a situation where we need to try things, sometimes fail. The amount of resource is what it is. You know, we're putting a certain amount of resource from the federal government toward either fee for service or value based healthcare and we've just massively increased the amount of resource toward value-based healthcare which I think is great. As far as how the private sector responds to that, I don't think the federal government has a huge amount of control over that. You put out the resource toward what area it is and let the private firms compete. If there's enough resource toward improving outcomes and reducing costs the private firms, both the vendor side and the health system side, will compete heavily for that and I think we're getting to the point now where there is enough resource to have competition. I think it still begs the question of how do we measure success.

**SARAH DASH:** Thanks. And speaking of provider readiness, we had a question come in that was a little bit more specific and it was for Wendy, which was about community hospitals and how do you know when they're ready or not ready to implement telehealth services?

WENDY EVERETT: That's a great question. I think there are three things that we've found in our research and the first is fairly general. And that is, does the community hospital really have a need, a strong need, for that particular telehealth innovation? I think one of the things that many of us who are working to speed the adoption of valuable innovations kind of shoot ourselves in the foot about is when we find a new really terrific innovation that does improve quality, does cut cost, we kind of feel like we can just apply it across the board to anyone without taking the time to be very sophisticated and thoughtful about what are the best targets for this innovation? So I think in the example of remote monitoring for intensive care units, hospitals that are in rural areas, hospitals that have real workforce shortages, there are hospitals in some parts of this country that will have a 10- to 15-bed ICU, they'll have a young pulmonologist staffing that from 8 until 4, four days a week otherwise it's just the nurses, so, kind of thinking about what are good target institutions or target service delivery organizations.

Second, I mean, this is going to seem so pedestrian, but you've got to have a champion. You've got to have someone in that community hospital, a CEO, the chief medical officer, who's going to stand up and say we're going to do this. When we started implementing computerized physician order entering one of the best Harvard affiliated community hospitals had a great CEO. He said we're going to do this. The chief of surgery handed him his resignation and said, "I'm not doing this." And he said, "Great. Thank you." It takes a lot of character to be able to have your chief of surgery walk out. Now he came back six months later and said, "I was wrong. I'd like my job back," but you don't know that at the moment that you're saying, "Thank you, I'll take CPOE over you."

Third, and finally, in terms of important characteristics, I think that what we've found is we have more success getting community hospitals to change when there is an affiliation with an academic medical center or a system, so it doesn't have to be academic, where they can actually see some financial benefit to adopting that innovation. So, for the community hospitals, just staying with the example I explained and tele-ICU, prior to their implementing e-ICU, they had to transfer all the patients who were really greater than level 2 out of their emergency department into the central nervous system, or the academic medical center because they really weren't equipped to take care of them. If you put in tele-ICU and keep all of those patients and when you keep those patients, they're sicker patients, and you're getting paid for them, you're not giving them up and so then you can move into some legitimate savings programs and some gain sharing so that the physicians shift their position a bit.

So, those are, you know, there are many more things that we look at but I would say those are three of the top drivers for really looking at a community hospital and a system and saying is this an appropriate target for this innovation?

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SARAH DASH: Thank you. Do you have any other questions Rachel?

RACHEL NUZUM: I've got the ACO question.

SARAH DASH: Alright, ACO question. Can't let you off the hook.

RACHEL NUZUM: Okay, so obviously there's been a huge explosion in the number of ACOs and some of your data, Matthew, was showing that kind of overall and we've seen some promising outcomes in those first two years, but I think we all know that there's still a tremendous amount of variation within that ACO pool, folks that have had a successful first couple of years and folks that have had not such a successful couple of first years. So, given that we're a couple years in, do we know anything about the elements that are really necessary to make those ACOs successful, to really get them to a point where they can both improve quality and reduce cost and really start to share in some of those savings?

MATTHEW PRESS: I think that those learnings are developing, so just a week ago, I think, in the New England Journal a group from Harvard published their evaluation of the pioneer ACO program that showed cost savings and they looked at a few factors and I'm not going to remember all the details of the study but the one that I do recall is looking at ACOs that included a hospital versus ACOs that did not, and they did not find that that was a predictor of cost savings, differential cost savings; that is, it didn't matter whether there was a hospital within the ACO or not. So, I think that studies like that, both from within the Innovation Center and external studies, will continue to shed light on that question. The annual reports evaluating the pioneer ACO program are posted and, again, they're rich with nuance from both qualitative and quantitative data. And I would say, and I think it was on my slide, that there were savings overall for the program but then individual, on average, individual ACOs were cost savers—well, not all, but on average they saved money individually.

SARAH DASH: Well, if there are no other questions – oh, there's one more. Yes, sir.

JOHN O'SHEA: I just have one quick question. John O'Shea, Heritage Foundation and general surgeon. I was just wondering if you could comment on any thoughts about how flexible you think the current models are, or the models that are in the process of being developed in terms of both anticipating and maybe incorporating some of the significant biomedical advances that seem to be coming down the pike and I'm thinking like personalized medicine, things like that, that could really be paradigm shifts in terms of the delivery of care. Any thoughts along those lines?

MATTHEW PRESS: I'd say a couple things. Number 1, the Innovation Center very much has an open door policy in terms of welcoming stakeholder input and encourage

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folks to contact us and share their innovations with us either through the website or by communicating with us directly. Two, in terms of the evolution of models, existing models, there's absolutely – there absolutely are opportunities to modify models midstream and we do that, again, based on learnings from evaluation or if there are other information that's brought to us by stakeholders. So, I think that's how we're getting at that, and I don't know if Dan maybe wants to comment on the personalized medicine piece.

DAN RISKIN: Yes, I have a quick comment on it. So I used to work in a venture firm. We funded 23andMe and Navigenics so we were very deep into personalized medicine and even now I work with several of the large groups putting out personalized medicine and other kind of innovative approaches to healthcare. I would say that when those firms are looking at proof points, at milestones so they can get the next round of funding so they can grow, we're not looking to federal government right now. We're looking to consumer payment. Now whether that's right or wrong I don't know. The federal government may choose that this is an area that they want to invest in and actually put a portion of the payment model toward that, but I do think that whether that happens or not the consumer segment is looking at this as an integral part of healthcare over time and is pretty much demanding that they have access to that through their wallet. That's been effective in creating and growing some of these companies. It could be accelerated, certainly, if the federal government chose to do that.

WENDY EVERETT: If I could just add on. This is at a slightly higher level, but what we've found over the past 15 years that we've been doing this is kind of as provider groups shift to some sort of global or capitated payment that allows them the freedom to really adopt innovations that they think are going to be congruent with their practice patterns, so whether it's personalized medicine or any of the other innovations we've referenced today, they're not having to think about who's going to pay for this on a piecemeal basis.

So we had an interesting sort of discouraging experience in one way but phenomenal in another, we were doing a clinical trial with a large integrated delivery system on home monitoring for congestive heart failure patients and when we started out they were completely fee for service. We had randomization. We talked the vendor into giving us all of the equipment for free, got through the IRB. A year into it they signed a contract with their major payer to go completely at risk and a week later they stopped the clinical trial because they knew that the results were very positive and they just spread home monitoring to every single chronically ill patient they had. So I completely lost the research project, on the other hand it was so clear that flipping over to a payment model that gave them the freedom to choose innovations that they felt would both improve quality and cut their costs so they could manage patient care better was, you know, kind of a bolt from heaven incentive.

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SARAH DASH: That's great. Thanks. We have another question. Shawn.

SHAWN: Thank you. Thank you for the panel. It's a really great topic. So complicated for all of us to understand how technology is the future of it. There's so much of it now, as you've all been saying.

I guess I have a question for Dan. I just wanted to go back to a point you made on your slide that I found really interesting and it said here that with rising valuations and a paucity of exits health IT innovation may be unsustainable at current levels. I think that's a really compelling statement and I wanted to get you to comment on what you mean by that in light of a comment that was made, and I won't quote it, but a comment that was made by Andy Slavitt who's the acting administrator of CMS at a conference last week, the HIMSS Conference, which is a healthcare technology innovation conference. And he said that we need technology and healthcare to basically reflect sort of a Moore's Law of innovation where every 2 years we get more value, if you will, for our innovations; so every 2 years we would get better computing power—the computing power would double. So he's sort of pushing and really wanting innovation to go and to be sort of exponential in healthcare so we have sort of a need for innovation and for it to keep going, and then you have this statement here. How can we reconcile sort of both of those ideas? Because I think they're both true but I'm not sure how to reconcile them myself, so if you could comment.

DANIEL RISKIN: Thank you. Thank you. I agree that they're both true. Andy Slavitt, very smart, and I agree completely that that would be desirable to have rapid or exponential growth in analytics and healthcare IT as it influences care. I think that what we're seeing is there's a lot of capital flowing into healthcare IT from a lot of different areas. There's a sense that there are subsidies. No one knows quite what's going to influence outcomes or costs, so there's broad – the investors tend to have a lot of bets out there, and that's okay for the current time. I think that a narrow number of areas will have good exits and acquisitions and that's where the money will divert. So right now we may have consumer engagement and population health, certain types of clinical analytics, mobile—we might have a lot of different areas. I think over the next few years we'll see what actually drives down costs and improves outcomes. The payment model will support transitioning to those. Once we get better visibility we'll have better intermediate markers so the firms growing these technologies will require less capital to get off the ground and so we will see contraction of investment. But the hope is that we'll see increased investment into the areas that are really making a difference and the payment models will help greatly with that.

RACHEL NUZUM: Great question, Shawn. Thank you. Okay, so we are going to close and we're going to take the moderator's perspective to ask our panelists to answer one

final question, and if you could identify one disruptive innovation coming down the pike in the next 12 months—let's give a little treat to the folks that have stayed with us on a Friday afternoon till 1:30—what's the one thing that you see really having a disruptive impact and give us a little glimpse.

DANIEL RISKIN: In 12 months, well it's easier to talk about the 10-year time horizon, but the 12-month time horizon, I think what we're seeing is increased data flowing out of the electronic health records, increased data flowing into the data warehouses and analytic systems which means that we get to do interesting analytics. We get to understand our high risk patients, drive resources to high-risk patients. Once we get some of the ICD10 and other stuff a little bit out of the way, I would say, people will start to focus on that to try to work with these new payment models. Maybe it's over the next couple of years. And I think that'll be powerful using that information to engage consumers, find the high risk people, support chronic condition coordinated care. I think we'll start to see some early benefits over the next 2 years.

RACHEL NUZUM: Great.

WENDY EVERETT: I can't stick to the 12-month time frame. In terms of an innovation that just has incredible opportunity, it's almost like the movie *The Graduate* when they say plastics. I'd say it's sensors. The use, the ubiquitous use of sensors, particularly in diagnostics, in home diagnostics and we haven't talked much about the patient's role in spurring the adoption of innovation, but sensors for monitoring, disease monitoring, capturing early adverse events where we can start to take care of people and give them much more of the ability to take care of themselves.

RACHEL NUZUM: Well, if it's not 12 months how long until that's widespread?

WENDY EVERETT: Well, I've been saying sensors for 15 years and I'm still going to say sensors. I think, you know, we're close to a pivot point. I'd say in the next 3 years, partly because of the push for personalized medicine and look what Theranos is doing. They can do a thousand blood tests on one drop of blood. That just gets put on a sensor chip. And so there's a lot going on in the background that I think is going to be able to shift to the foreground in the next 3 years.

MATTHEW PRESS: I think the disruptive innovation in the next year or so is the increasing use of alternative payment models and kind of in conjunction with that the public-private partnership through the Healthcare Payment Learning and Action Network and other means to really bring this innovation in payment throughout the health system.

SARAH DASH: Great. Well, thank you so much to all of you, and in the name of rapid learning and improvement, if you could all please fill out your evaluation form before you leave and please join me in thanking our panel.

[Applause]

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