The meeting convened at the National Quality Forum, 9th Floor Conference Room, 1030 15th Street, N.W., Washington, D.C., at 8:00 a.m., Rosemary Kennedy, Moderator, presiding. PRESENT:

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DR. KENNEDY: Good morning everyone. We are going to get started. I am Rosemary Kennedy, Vice President of Health Information Technology at the National Quality Forum and I just want to invite you to our second eMeasure Learning Collaborative face-to-face meeting. And the first meeting was conducted in April. We had over 100 attendees with approximately 50 participating over the internet. Today is the same. We have close to 100 registrants in person and we have approximately between 50 and 60 participants over the internet listening in.

So for those of you, how many participated in the April face-to-face meeting?

(Show of hands.)

DR. KENNEDY: Quite a few. So some of you are familiar with the eMeasure
Learning Collaborative. And for those of you who are not, the eMeasure Learning Collaborative is an open public forum to bring together stakeholders from the quality measurement enterprise. That includes stakeholders in the field of measure development. It includes vendors, clinicians, all of those that are involved in care delivery in the specialty of quality measurement. So it is really a vast large group that we are bringing together through funding from HHS and these meetings are open to the public. And it is all the stakeholders in the public that are really very critical if we are going to be successful in the field of electronic measurement.

The goal of the eMeasure Learning Collaborative is to share learning and knowledge and also to share best practices related to electronic measurement using data coming from health IT systems that are captured as a natural byproduct of care.
delivery.

The eMeasure Learning Collaborative is also focused on identifying gaps and making recommendations. And it is through the input of all the key stakeholders that will really be able to move this platform forward.

As I said, this is a second face-to-face meeting for the eMeasure Learning Collaborative. We will also be doing sharing of knowledge, best practices, gaps and recommendations electronically and creating communities of practice, if you will, to continue the dialogue, to continue the exchange of information. And we will talk a little bit about that more later today.

During this eMeasure Learning Collaborative, we will be focusing on three major areas of discussion. The first area is condition/problem management, looking at opportunities, challenges, best practices relating to capturing information related to
condition and problem management. And that will be a panel. We are going to conduct this by setting up panels that will share some use case examples, share some I like to call them best practices, maybe wherever you are right now they are more like repeatable models. And then as a byproduct, we will discuss recommendations, identify gaps. We welcome your participation. It is through your input and knowledge that we will be able to really move this forward.

The second area will focus on medication management and the third area will focus on data visibility, those essential elusive data elements that are in the record that may be a little hard to get out.

So through three panels, best practices examples will be shared and then we will open it for discussion, also including the public participation on the internet.

There are basically around three, four questions that we are going to ask today.
What are the best practice examples related to the development and implementation of eMeasures? And based on our experiences to date with MU2, this should generate a lot of interactive dialogue from all stakeholders.

The second question will focus on mechanisms to enhance data and workflow capability. It is not just getting the data for electronic measurement but it has significant impacts at the point of care on workflow. So we will spend some time talking about that.

And then we will discuss some recommendations for future use of health IT and standards to enable the eMeasurement space and spend a little bit of time discussing how we can maybe rethink what we are doing to do it in a smarter fashion and do it more efficiently.

So there are some of the questions that we will ask and discuss today.

I would like to take this time to
thank the planning committee. We had a call to the public for members of the planning committee. We have approximately 22 individuals. Those of you who are on the planning committee, would you please stand up?

(Applause.)

DR. KENNEDY: They met biweekly and I must say we put them to work. And I think it will reflect because the members of the planning committee really represent all of the stakeholders in the market, spanning the whole entire continuum.

And with that, I would like to introduce the chair of our planning committee. he has done a significant amount of work for us and we really do appreciate that. And Dr. Zahid Butt is the eMeasure Learning Collaborative planning chair. He is President and Chief Executive Officer with Medisolv. He has more than 25 years of experience in a variety of healthcare settings. His current efforts are focused on building software
applications that leverage hospital datasets
for quality improvement and business
intelligence. He served many leadership roles
both in medicine, policy, quality, and health
information technology.

He is actively involved in CMS' expert Technical Expert Panel for Meaningful Use Clinical Quality Measures. And Dr. Butt currently chairs the HIMSS National Quality Forum Task Force.

And we can't say enough about Dr. Butt with all the efforts related to MU2 and the timelines, he really steps up the plate and contributed significantly to the content for today's curriculum. So with that, I would like to call Dr. Butt to the podium.

DR. BUTT: Thank you, Rosemary.

Good morning. I welcome you all to a beautiful day in the nation's capital and it is wonderful to see so many familiar faces here that we have had the pleasure of meeting from time to time here at the NQF.
And my job this morning is to try to summarize some of the themes and concepts that came out of the first in-person meeting on April 26th. So the meeting was held as Rosemary mentioned here at the -- how do I advance this thing? Thank you.

Okay. So the meeting, as Rosemary mentioned, was held here in person and we had organized the meeting into five different discussion groups or tracks, if you will. One was acute care, the other was small practices, and individual ambulatory care practices. There was a technical group data analytics group and an innovation track. And the format was that these folks, after the two keynote speakers went into separate sessions and tried to discuss the areas that they were assigned. It did present a little bit of a technical challenge in terms of getting the online people involved in five different sessions, however, each session had a couple of moderators and the NQF staff assigned scribes
who were able to capture all of the
information and also record the dialogue. So
I have learned that everything gets recorded
at the NQF, I guess. Almost everything gets
recorded.

But what we have tried to do is to
-- the NQF staff have then gone back and they
have tried to summarize some of the sort of
discussion that took place. So what we have
done is put together some slides to just kind
of walk you through the flavor of the
discussion that took place. We haven't
necessarily edited stuff out but just
summarize it so even if something doesn't look
relevant it is because we just wanted to
capture. And as you know, when you get very
smart people in a room, tangential discussions
are often the result. But be that as it may,
we have tried to summarize and hopefully give
you a little flavor that sort of sets the
stage for what we are going to do today.

But before I do that, the two
keynotes included Dr. Kate Goodrich. She is at the CMS Office of Clinical Standards and Quality. She gave us an overview of all of the different quality measure activities that take place over there. It was a very, very good overview that everybody appreciated.

And then Dr. Mostashari, who needs no introduction gave a rather inspiring speech and the four takeaway points from that speech were that we should use the marketplace for solutions. It is kind of refreshing to see that from a government person.

Keep our eyes on the prize which is really HIT as a means to an end, which is really improving quality of care for our patients, which we need to always keep at the center. And watch out for, as we discussed, these big solutions. We should always be looking out for the people who are out there struggling to take care of patients on a daily basis and we should never leave sight of those people.
So with that same spirit, we sort of tried to organize the various discussions into these three key areas, the focusing being really on implementation, since the eMeasures Learning Collaborative primarily is about how do we implement eMeasures and how do we increase the uptake of eMeasures out in the field and, secondarily, give the feedback to people so that it is sort of a continuous improvement loop.

So these three areas were sort of felt to be very important as far as implementation is concerned. Organizational factors/leadership was felt to be an important domain out there. We also spent a lot of time on data capture and clinical workflow and certainly the goal is also to have a learning health system.

So the key success factors within organizational and leadership areas is probably somewhat intuitive and not a big surprise to anyone. It was felt that these
efforts really for them to be very successful should be collaborative multi-stakeholder. There should be strong physician leadership but not only that, the bedside clinicians, be they physicians or other clinicians, need to be engaged early and often.

The culture obviously always gets in the way of these things and you may have heard that famous line that culture will eat strategy for lunch any day. And so clearly changing the culture is important in institutions. It was also felt that sufficient time and resources to education is important, which is often not thought of in that fashion.

And then the clinical staff and IT people need to work together towards a common goal and use success of the program to garner support throughout the system especially by using benchmarks.

So the key success factors of our learning health system were felt to be an
emphasis on outcome measures to improve clinical practice and not just simply measures for the sake of measuring.

The logic of linking patient conditions in EHR to evidence-based best practice guidelines and clinical decision support is felt to be an important success factor as a part of learning.

There was a thought expressed that sometimes measure specifications lag clinical guideline advances and perhaps that is sort of a key success factor that there needs to be more rapid cycle incorporation into the guidelines.

Clinician education on the meaning and methods before the actual measurement was felt to be very important because a lot of times the clinicians are told after a measurement is already in place that this is what we are going to measure as opposed to sort of getting them involved up-front and explain to them why a measurement is going to
be done and why it is important.

The last one is important because it is also felt that the learning health system needs to be more transparent and also not sort of punitive. It should be the foster improvement and people should be free and should share the experiences without any fear of retribution.

So in these two areas there were some recommendations, organizational leadership, perhaps the NQF, which is by nature a multi-stakeholder type of platform should, perhaps define the type of stakeholders that are needed in these organizations to come together, emphasize as Dr. Mostashari said, keep our eye on the prize and make sure that we identify the goals.

And it was also felt that sometimes small practices get overwhelmed with these measures and then perhaps a smaller set of measures could be given to smaller practices so that they can try to learn from
that and improve their ability to report.

The learning health system environment needs to again be a multidisciplinary type of effort which should engage all the key stakeholders that Rosemary has already mentioned. And it was also felt that perhaps a learning health system should focus on one specific area, instead of just sort of going broadly with a whole grab bag of measures but to take one area and do it really well so that you can show end-to-end improvement from the point of clinical care to all the way outcomes measurement. And so that sort of resonates more with the care delivery providers and they can sort of connect to how measurement relates back to what they do on a day-to-day basis.

Integrating the EHR into population management and case management were some of the recommendations. HIEs are beginning to form and it was felt that they need to maybe pick one measure and perhaps
look at cost if they are not as rich in quality data and somehow try to cut their teeth on measurement at the HIE level.

And then the last one is sort of intriguing that a true learning system really should be a system where it is a self-learning system that the system really needs to be sort of a futuristic idea that as the system is measuring itself, from what I am told in industrial engineering and manufacturing, some of this type of activity already takes place that the system by analyzing the data actually tells them. That is sort of the true business intelligence, if you will. So that is kind of the true north that someone thought was important to keep in front of us.

There was a lot of discussion, as you might imagine on data capture and workflow. I mean these two words have become very common now as we all sort of get into the actual implementation of eMeasures. Because really that is kind of where the data
originates. And so the key success factors in this obviously were that we should have smart clinical data capture sharable with clinical decision support and measurement so you capture once and use it many times. So that is sort of the holy grail that you all sort of thought important.

Reduce the burden of data capture for quality only. So in other words, doctors should not be made abstractors, if you will, by just adding more screens for them to fill out information. So that is a key point that is important.

There needs to be a balance between liquidity and expressivity. Whether something is granular, does it really matter in the context measurement that we need the last little nugget of information at the lowest level? So that was another point.

It was felt that there were too many prescriptive requirements as to exactly where the EHR data must be captured and
stored. And this is kind of a tough one because the next one says that you should have more flexibility in configuration. So it is kind of a difficult thing because on the one hand you want to standardize things, which some imply that it should be more prescriptive. On the other hand, people want more flexibility on how they can capture data and how you sort of marry those two together where the data capture is manageable and flexible, yet it is able to be standardized for the core elements that are to be captured.

The gaps, there were several gaps identified. These include cultural and technical issues with capturing structure data. So structural data capture is always a difficult thing.

EHRs use a model of use while the measures require a model of meaning. So there is a little bit of a disconnect there.

Usability it was felt not formally addressed by vendors and then there is the inability to
use unstructured data in an efficient way for
eMeasure reporting and there are multiple
unresolved issues with the problem list,
especially on the inpatient side. And we
don't have all the data in EHR or fully
understand the systems from which data are
derived.

So a lot of these comments are
sort of gaps identified by providers because
by nature sometimes they don't know the data
in their EHR where it is coming from, et
cetera.

A few more gaps identified and I
think that the top three are probably related
that pairs probably use a lot of claims data
for quality reporting and somebody felt that
they didn't pay for specialty guidelines or
that is why the clinical data collection is not
that great.

There is a provider-to-coder
disconnect because the coders, especially on
the inpatient side, do code the encounter, the
discharge, and sometimes there is not a sort of smooth relationship between the provider and coder in a more proactive way. There are some sort of the coders sort of creating physicians and then they have to respond back, et cetera but it was felt that that needs to be -- that that is a gap that needs to be addressed.

HL7 was felt to be somewhat of a slow-moving thing which has long cycles and is difficult to modify. I'm not sure how that gap will be filled but it is there and someone mentioned it and how to get everyone to agree on how to set standards is to read the final rule.

So but I think that is really one of the key accomplishments of Meaningful Use is really to force those standards that I think you may have heard that famous saying that standards are like a toothbrush. Everyone recognizes they need one but no one wants to use somebody else's.
(Laughter.)

DR. BUTT: So the recommendations as far as data capture and workflow were concerned, the first is obvious, train physicians on how to use the EMR and patient-centered input of data. And perhaps there should be some low-hanging fruit that is simple to collect, simple to report, leveraging existing data that is being collected as part of Meaningful Use. Perhaps you should really aim for the low-hanging fruit first.

Select measures with specifications matching data elements captured according to Meaningful Use so that is kind of in that same category. Develop a culture and technical solutions for capturing more structured data within clinical workflow. And perhaps even have some framework of measuring userability. I mean this was also one of the things that came out, that there is no framework to really see who is capable of
doing what and sort of have some kind of a mechanism to perhaps those that are having difficulty with certain data to help them with that. Perhaps there are some of those methods that people have developed in their institutions. It would be an interesting point to sort of see if there are people who have tried to do those type of things as part of their implementation.

Explore new technologies such as natural language processing and there is really a lot of promise, a lot of excitement about this. You know we have got vast quantities of unstructured data and perhaps we will continue to have vast quantities of unstructured data. And is there a technological solution to try to convert that into some sort of structured thing? I am sure that during today's presentation we will hear some of that.

So one of the other things that came through is that there needs to be some
mechanisms to incorporate the external data sources, especially in medication management because that is important. Providers often respond much better to appropriately designed CDS, clinical decision support, and so if you can leverage data for both clinical decision support and measurement that perhaps that would be sort of a winning formula with physicians and clinicians.

And the last one is sort of again one of those frontier type things. What about patient-reported data? How do we sort of incorporate that into measurement?

I guess the number one as I said before vendors are already sort of complying with some of the standardization that is part of Meaningful Use. There was a sense that the quality data model should be used to resolve ambiguity with respect to logic and meaning. And there should be harmonization of measure specification value sets and output for reporting.
It was also felt that in our
desire to try to sort of move all of this into
sort of codification that perhaps we shouldn't
lose site of the fact that the English
language still matters to many people and that
here should be always some explanation of what
is being sort of done in a geeky sort of way
that is understandable by regular users so
that they can connect with what is being done
on the back end.

Usability testing, field testing,
and even registry reporting which currently is
somewhat limited in the sense that it collects
a very narrow set of data variables was felt
to be something that could be leveraged to
extend their capability.

And I believe this should be the
final slide. There was, again, this is just
to give you a flavor of what was being said
and it was that the entire HL7 RIM is perhaps
too big but there should be some kind of a
basic schema that needs to come out of it.
And then vendors should try to maybe have a dedicated area for quality measurement and they should move towards a single source of truth type of framework because multiple data sources have that problem at the data collection level, where there seems to be no single source of truth obvious to some people. Devices have a lot of data that could move into the EHR for reporting.

And finally, someone did point out that yes, it is important to sort of get down to a very basic level in terms of what is possible to report but we shouldn't lose sight of the fact that there is possibly some advanced measures and future that could leverage data that might be considered unusable today in sort of a very locked down structural fashion.

And I think with that I would like to just point out that all this material is on the NQF website and I have put in the link up
there because you have both PDFs and the MP3
recordings if you want to listen in any of
those conversations.

So I think that wraps up the sort
of summary of the April 26th meeting and I
turn it back over to Rosemary. Thank you.

(Applause.)

DR. KENNEDY: I don't know about
the rest of you but it is somewhat
overwhelming if you look at it but in
reflecting on the April 26th meeting and what
Dr. Butt just reviewed, our focus has been
really on trying to find that right balance
between the data granularity that is needed to
describe the measure and to get that
represented and integrated in the electronic
health record in a way that we can capture
data and do electronic quality reporting. But
finding that balance between getting the data
granularity and not necessarily increasing the
burden on the mission at the point of care.

So although that has been the
focus, if you kind of think about it, I was just reflecting listening to him speak, if you think about Meaningful Use and everything that is going on, it really is addressing those other two areas as well; organizational culture, because we are trying to change culture, change how people think, and the second area a learning health system. We are kind of in that rapid cycle, very rapid cycle plan-do-study-act all at the same time. So I think we are trying to address all of those.

And the panel today present case studies and we have the discussion certainly you will hear which we are just asking you to be patients with a lot of these things coming up. Leadership, culture, changing, creating a learning system, and then also this data infrastructure. And it is somewhat challenging but it is important to look at all three of those domains.

So the first panel is going to focus on condition/problem management. The
moderator for that panel is Ginny Meadows. She is a registered nurse and Executive Director of the Program Office at McKesson.

So I would like to ask the first panel members to come up. And Ginny, if you can please introduce the panel members. We will have them share their use cases, their studies, their perspectives and then we will open it up for Q and A and interactive dialogue.

We really encourage interactive dialogue of Q and A because you folks are really generating the recommendations that we will embrace moving forward. So it is very important to engage and I am sure everyone will.

MS. MEADOWS: Is this on? Yes, it is. Thank you, Rosemary, very much for that nice introduction.

So just to introduce this, you heard as Dr. Butt talked about some of the things that we learned in our last
collaborative meeting, one of the issues -- it is not on?

Is that better? Yes. All right.

Sorry.

So what I was saying is as Dr. Butt pointed out in our first collaborative meeting, one of the things that we identified as being a significant challenge, and really a lot of it was introduced with Meaningful Use Stage 1 in both the key objective of being able to define a problem list but then in the quality measurement and how those conditions and problem management really drive a lot of the quality measures.

So condition and problem management really came into focus as being something we really wanted to explore more deeply in this learning collaborative.

And I will introduce my panel speakers. You met earlier Dr. Butt and he will talk about how in an ambulatory setting, how they have actually identified some best
practices to manage that problem list. And also some of the key challenges that they have identified there.

And then Peggy Pollard who will speak first is a registered nurse. She is the Director of Clinical Informatics at CentraHealth and Peggy is responsible actually for leading all of Centra's clinical system implementation and they successfully attested to Meaningful Use in 2011 so they were one of the early attesters. So they have been on this journey now for a couple of years so they have a lot of experience to talk about as far as how they have handled the management of their condition and problem management in the acute care setting.

So we have a couple of objectives for this panel. As we go through the different case studies, you will hear them both talk about some of these. So first of all is really defining condition and problem management and its importance to eMeasures and
why it is really necessary to make sure that
you have got a really good accurate,
consistent identification of those problems.

It is a foundational objective for
Meaningful Use Stage 1, as we all know, but it
also plays a key role in the denominator
selection for many -- well really almost all
of the quality measures. And it is also
important for looking at exclusions as you are
trying to calculate those measures. And it is
a key input to clinical decisions support.

So the management of the
conditions and problems that a patient has
really plays such a key factor in all of this
technology.

And so as we go through the panel
presentations, each one of the panelists will
identify some of the best practices that they
have used in their organizations to really
drive this and talk about some of the
recommendations they might have that could
actually be carried on and best practices for
other organizations to use.

Then we will also talk about some of the key challenges and what the gap areas really are that we really need to focus some more attention to and start thinking about what is the best way to handle some of those things and what potentially other opportunities are there for some additional work in this area?

So as I said, the panel discussion will include the clinical case studies and innovative solutions to really address the condition/problem management and the acute and ambulatory setting. Once we finish the case studies, then we are going to open it up to more of a group discussion. So this is where we are really going to ask for your input and have some actually open discussion on some of the things that were identified by both Peggy and Dr. Butt but then also some other things that you may also have some experience with and ideas that we want to expose and explore.
a little bit more in this collaborative setting.

We will have about a little bit less than an hour and a half to do this discussion and I would like to remind all of our attendees that are on the phone that we will also be able to entertain questions through the chat box from the webinar or other, I don't know if they have an interactive phone -- is there a phone? So it will be the chat box. So we will welcome their questions through that chat box.

Okay, so Dr. Butt is going to present first because his slides are first.

DR. BUTT: Okay thank you, Ginny. I was hoping for a little breather but that is okay.

Anyway so in my spare time I wear another hat, which is to go and see some patients a couple of times a week. And this is the practice that I have been affiliated with for a long time. We are located in
suburban Baltimore/Howard County and this is sort of the obligatory slide of who you are sort of thing.

We were established, the practice was established in 1988; 15 certified gastroenterologists. We have one PA, two nurse practitioners, two endoscopy centers. We have privileges in two different hospitals, acute care hospitals. We do actually have a small clinical research group that has three full-time research associates. We do some clinical studies mostly as sub-investigators where it has to do with inflammatory bowel disease or polyp surveillance, et cetera. We also have on-staff three anesthesiologists, four nurse anesthetists and one part-time pathologist.

These are some of the statistics. We are a general community-based consulting practice. We had, as of 2011, 19,503 unique patients, which is sort of a new lexicon we have adopted since Meaningful Use. Around
5,000 inpatient consults, 22,000 ambulatory visits, 2100 hospital procedures. And the age range of our providers is from 35 to 66. I think the guy who is 66 is probably older. He just says that he is 66.

(Laughter.)

DR. BUTT: He certainly looks a little older.

So this is our HIT journey basically. I am going to focus on our sort of HIT journey with a focus, with an emphasis on problem list/condition because I think that is a very important part of it. Obviously, this panel is focused on that.

So we had a practice management system in 1990 and one provider, which is myself, was using an ambulatory EMR since 1996. And just to digress for a moment, back then I was on-staff at a hospital and I was Director of Clinical Information Systems. And I got called in by the CEO one day and he said we are going to buy all these primary care
practices. For those of you who have been around that long you might remember there was a phase of this hospitals buying practices back in the mid-'90s. We are now in a sort of back to the future again.

But anyway, he said we are going to buy all these primary practices and we want to use an EMR as one of the big selling points. So you have two months to go out and find an EMR and start piloting it. So I went out and did my due diligence and found an EMR and started piloting it.

And so they bought some practices. It sort of didn't go so well for other reasons but the long and short of it is I continued the pilot from '96 until 2011. So it was sort of the time in wilderness for 15 years. I was just an island in the practice and no one sort of wanted to touch me. They didn't want to come close to me.

And I tried many times to sort of see if there would be an interest amongst my
other providers to sort of expand this thing
to the entire practice but I had no takers at all.

It wasn't until I showed them this slide in 2011 and I said okay, how would you like to get $44,000 each and, by the way, if you wait until 2014, it will be down to $24,000. This is what we were able to accomplish in six months.

(Laughter.)

DR. BUTT: So say what you may about capitalism. One thing you can't say is that it doesn't work.

So we were able to upgrade our EMR system to a full certified EHR system. We had to upgrade hardware, et cetera, et cetera. You know they were willing to make the commitment for both money as well as their attention.

We were able to do major workflow changes, structure data entry, forms-based data entry, CPOE, ePrescribing, interfaces
with two of the largest commercial labs, radiology, and to our ambulatory software system, we have an ADT interface to that. All external documents are now scanned in and eight of the fifteen are actually currently ready to attest for Meaningful Use Stage 1.

The one provider that out of these eight that had the most difficulty was the one who had been using the system the longest, which was myself, because I realized how efficient we can get with bad practices and how difficult it is to relearn good practices, which I think are good practices doing this.

So I am just going to take a few minutes to just show you the sort of the pre and the post and it might be important to make the distinction. In the pre I actually was doing my own problem list. I was capturing it in ICD-9 while I was interviewing the patient. I was capturing medication lists but they were not codified. In other words, there was no RxNorm attached to them. And I was
selectively entering some of the lab results in the flow sheet sort of just to keep track of a few things for certain select patients, obviously.

Much of what I was doing was totally unstructured text templates and I had all sorts of ways of quick text and this and that to get very efficient at generating a note. And then the demographics were just a minimal data set. There was no interface with our practice management system.

So here is where we are today. We are obviously entering medications in the medication list that is not only structured but codified problem lists, lab data structure. Very few data elements are unstructured and full demographic interface. The big difference is in the workflow. So we have initially the provider was just entering all of the data whether structured or unstructured and the notes were then printed and put in the chart. And for everything
basically it was just paper chart and pools
and all the orders were handwritten.

So here is the workflow we have
now and that is sort of the major change that
we have now our new role in the practice of
medical assistant who are capturing the
problem list, medication list, allergy list,
the past medical history.

Now the reason I bring this up is
that this almost, this capture of the problem
list the way I was doing it, almost derailed
this entire project even the $44,000 was not
enough to convince my partners to do it
themselves. They just said forget it. I am
not doing it. So we really had to go to this
model to try to sort of get the problem list
and the medication list and the allergy list
structure data entered through medical
assistant.

Now I know we have talked about
the best practices. I am not suggesting that
this is the best practice but this is a
practice to get this thing going. And I think I am sure that there is more than one way to practice this stuff or capture this data but I think the goal is to whatever method one chooses to have some sort of a best practice so that there is accuracy in that data and that is sort of the point I want to make with this one.

So here are some of the challenges that we had with the problem list documentation. And I am using sort of problem list sort of interchangeably with condition management or diagnosis. But if you think about it, a problem list is more expansive in general. It has sometimes more things than just condition and diagnosis. So that was one of the questions you have to ask first. What is going to be in your problem list? Is it going to be just the conditions and diagnosis or is it going to be more expansive? And there is no right or wrong answer, I don't believe there is, because all of these things
are important if you are trying to sort of put
them on a list.

So for example, should we be
putting presumptive or suspected diagnosis?
We have a feature within the product that says
you can say question of and even select some
problem. Procedures are important. So the
practice decided to have a more expansive
problem list, since we are a specialty
practice. The question was should we put all
conditions on the problem list that the
patient has or just the ones that we track and
follow. And the practice again decided to put
all the conditions that a patient has on the
problem list.

This is, the past medical history
is sort of an example of where the old and the
new world sort of collide because in the past
we would say okay so this patient has past
medical history of hypertension, diabetes,
this, this, this, and this and everybody
understood what that meant. But in this
world, when you are codifying it, ICD-9 often
has a different code for history of. So for
instance, a polyp can be coded as a diagnosis
or as a history of a polyp, which has these
so-called V-Codes attached to it. And I will
show you later on the implications of this, of
how you sort of navigate this part but
physicians have to almost really rethink the
way they used to think past medical history.

And so anyway, I have a few screen
shots just to kind of get you a flavor of what
I am talking about. So here is our sort of
desktop and it has the problems on the left
side, the medication on the right side. And
so one way to enter the problem is to just go
in and select from a problem list. It is
relatively easy because you just type in a few
words and it picks up a coded list and you can
select. But this is the one that most of the
doctors didn't want to do it. They didn't
want to have to sit there and enter 15
problems of a patient by doing this
repeatedly.

So the question became that a medical assistant, how do they select these if we are going to give them. I mean yes, we can train them a little bit but they are not going to have the knowledge in general to be able to select the right code and so forth.

So the solution is this. This may be a practice, as I said, maybe not the best practice but it is a workable solution. So we have now a new patient. They always used to fill out forms before but now the form is basically codified in a sense that we have under the past medical history, which is really going to be the part of the conditions and problems, we have created common sort of words and there is an EMR version of that and this common term is now in the back end coded to an ICD code.

So the patient selects this. In that sense, the medical assistant is really almost a data entry person so there is less
chance for error and ambiguity. At least we are capturing the codes that we have defined and locked down. And then the physician certainly can review and change it, if they want to later on.

So the problem or condition then sort of becomes important. And this is where I was again going to circle back and so we had all these history, the past medical history was all these V-Codes. So they were going in as a V-Code in the problem list. But then under the assessment section, the physician was selecting that code to put in their assessment but then it was pulling up the V-Code. And they were saying well wait a minute. I am treating this current problem and the code is telling me it is a previous problem.

So now we have split that form that I showed you earlier that truly the ones that are previous problems are V-codes and so there is a lot of this iterative sort of thing
which we had to discover on our own. So the
recommendation is really could we have some
sort of an implementation guideline that sort
of goes through some of these types of very
detailed -- now whether that is a vendor issue
or whether that is an NQF or a multi-
stakeholder but there needs to be some kind of
guidance and there is really not a lot of
standard or guidance as to what needs to get
into these things and how do they effect the
workflow.

And it is even more important here
because as you see on the right side, we have
the problem, this diagnoses. These are the
same diagnoses that have been entered and then
we select those to attach to our encounter
billing. So the physician will then select
the encounter code. And generally many of the
insurance companies will question if you put
a V-code as a billing diagnosis whether that
is worthy of payment.

So when you are tying your problem
list condition to your assessment, to your
billing diagnosis, you really need to be very
careful how you design this thing so that the
alternative would have been for the physician
to have to go into the problem list, change
it, then come back. So it is death by a
thousand click type of workflow.

So then this is my final slide.
So you go through all the pain and then you
can run your report. So NQF 61: blood
pressure management in diabetics. And I have
purposely blotted out the user names. This is
actual data. And we have performance rate of
zero percent to 75 percent in the same
practice. The problem is, none of us take
care of the blood pressure of these patients.
So that is part of the problem that you know,
eMeasures will generate data but we have to be
very careful in attribution of that result to
a physician who is doing the actual care and
responsible.

So I know CMS is working really
hard on this attribution issue in question and
they have some methodologies that they are
developing but to me, as we get more and more
of this eMeasure type data that is going to be
sucked in directly from the system,
attrition is going to become extremely
critical.

Now from our standpoint, we are
going to report this because this is one of
the measures that we have to report to get
paid. But thank God they are not looking at
the numbers because somebody might think that
the zero percent guy is really terrible,
although it is just the luck of the draw that
his five cases, his referring doctors are not
doing a good job. The PCPs who were managing
that patient's hypertension are not doing a
good job but that shows up under his name.

So I don't know, I may have gone
over my time. Is it okay?

DR. KENNEDY: Yes.

DR. BUTT: So here are the gaps
that I was asked to come up with and I think
that there needs to be maybe not just one best
practice but two or three different best
practices that we should provide more
implementation guidance of the type that I was
describing because there is nothing out there.
I did some searches. AHIMA has some articles
they have published but those are very high
level, sort of general concepts but it doesn't
get into the nitty-gritty of provider workflow
and how you incorporate the condition
management into your problem list.

Harmonization of structure data
capture with standardized values has a QDM
attributes -- states and attributes. And this
is a very important one because for example,
I will give you one example. When we do a
problem there is a date of onset that we can
put in and then there is a date the problem
was resolved. Our system assumes that the
problem is active when there is no resolution
date but there is a date of onset. But the
QDM attribute actually makes a distinction between inactive and resolution. So yes, if it is resolved it becomes inactive but there is a state before resolved that could potentially occur, which is inactive. But that needs to be an attribute that is something that we can point to within the problem list in the system.

And so these types of issues now fortunately none of the specifications use inactive problems. Most of the specifications just use active so it doesn't matter because that is synonymous with unresolved issues. So these types of small nuances need to be harmonized.

In the future obviously now with Meaningful Use Stage 2 problem list is going to be locked down with SNOMED. They have already stated that ICD-9 is not accepted, although sort of a translation can take place. That raises the issue of the encounter diagnosis because that needs to be an ICD.
So there needs to be some automated system where a SNOMED code is selected on the problem list and it translates automatically into the encounter diagnosis. And then in the future some framework for reconciliation of external problem list.

So these are some general lessons learned. You know, one of the ones is very important even someone like myself who was very into the eMeasure space, we actually didn't sit down and select the CQMs that we were going to end of reporting ahead of implementation. We somehow thought we would just figure it out towards the end. But that is critical because if you miss two data elements and so forth in your implementation, some of your, you know, like the smoking cessation stuff and so forth. So you need to incorporate that up-front.

And then really if you want to do this thing right you will have to redesign the entire workflow of the office.
Okay, so and finally education and staff turnover and so forth. So that is my last slide. I apologize for going a little over but I am very passionate about this stuff, so please forgive me for that.

But I think I will stop here and if there any -- I guess -- you are going to do the Q and A together. Right?

DR. KENNEDY: We are not going to do Q and A.

DR. BUTT: Oh, okay.

MS. MEADOWS: We have a little change of plans.

DR. KENNEDY: We're going to change the plans a little bit but you probably won't know because you didn't know what the original plans were.

(Laughter.)

MS. MEADOWS: We're fluid.

DR. KENNEDY: So we are very fluid here and you, too, we have learned to be really fluid over the last few months. But we
have a very special guest who we wanted to do a break to introduce Dr. Farzad Mostashari who has been --

(Applause.)

DR. KENNEDY: -- very supportive of the whole eMeasure Learning Collaborative. He came and participated in the April 26th face-to-face meeting, gave us a go-forward pass with some recommendations and charters and we have not accomplished them all but we are still in the process of getting there in terms of doing some things with the quality data model and quality measures. So we do appreciate you being here and your support.

DR. MOSTASHARI: Thank you so much. I am really glad to be here and to be able to support this effort.

Patrick Conway, the head of the CMS Office of Clinical Standards and Quality as well as Carolyn Clancy and I last Friday did a webinar where we talked about the future of quality of measurement. I don't know if
any of you had an opportunity to dial into that. I believe the presentation is available and I think we should probably write that up into something that others can read.

But we started off talking about what the vision is for quality measurement for the future. And to me, the most significant shift comes when quality measurement moves from being retrospective accounting to being real-time improvement and all of the pains of getting there somehow become worth it.

I was visiting a small community hospital whose is on an electronic health record and I said what has Meaningful Use of electronic health records, how has that changed what you do? And they said before, a patient would be discharged. We would pull a sample of the charts. We would start flipping through and we would find these care gaps. And it almost like we couldn't believe it. Right? Like surely we gave the person the prophylaxis or surely we gave them the
pneumonia shot, or surely we did this. How could we have missed it? Look harder. Look harder. Surely we have missed it. Flip through the charts. Flip back. Scrub it harder. And at the end of the day we didn't do it as often as we thought we did.

And they said now, they almost said it as if they are cheating, like now and they weren't sure if they should tell me or not. Now when the patient is still in the hospital, we look at how they are doing on the care protocols. And look at this. Look at this. Look at this. I can order it. I'm like that's not cheating. That's good. That is what we want. That is the difference. And maybe you can have perfectly good quality measurement for the purposes of payment or accountability but you can't do this with paper.

Now, we also recognize that making this shift to real-time means that things have got to change. Right? And this is what we
have learned. We have learned. Fortunately, many of us have been working at this for more than just the past two years. So there is a lot to build on. Carolyn presented some of the research that AHRQ has done going way back on what are the challenges that we have learned about. And let me just run through a few of them and not the progress we have made on each.

The first is you can't expect these electronic health records to capture everything, every measure. And so there is a need to focus. Right? There is a need for focus and to prioritize. And yet while there are over a thousand -- Helen? Seven hundred measures to choose from, if we look at key things that we want to accomplish, there are some surprising gaps. So having the framework that says let's start with what we are trying to accomplish and work backwards and then not just have a purely bottom-up approach but also a little bit of top down what are we trying to
accomplish and work backwards from that and identify what the priorities are. This has been really hard to do. Right, folks? It has been really hard to say this is a higher priority than that. Well both of them have constituents who have brought forth measures. Right? But the National Quality Strategy did that. It said six priority areas, preventable causes of death beginning with cardiovascular disease, the Million Hearts Program, patient safety readmissions and hospital-acquired conditions, patient family engagement, care coordination. And then you look at each of those and you say for care coordination, do we really have great measures, broad-based parsimonious, even process measures? When a referral is made, did you close the loop? And so there began a process of measure acceleration. Some of the work that CMS funded through us, with us, partnering with AMA and PCPI and others to get measures developed de novo. Any of you involved in
those activities? Thank you. Right? So closing the referral loop and having it tests pretty well. Right, Kevin? We are getting better.

Medication safety we talked about.
Meds in the elderly accounts for 3.3 percent of all elderly ED visits to emergency rooms. Coumadin accounts for 30 percent, ten times as much. We didn't have a measure for Coumadin management safety, warfarin safety management. Are you in the zone or not? And the team found a measure from VA that hadn't gone through the process and we accelerated that and got that through for Meaningful Use.

So accelerating the quality measures. But it is also how you develop and maintain those quality measures so that the value sets. If one code changes you can separate that. And we have created with National Library of Medicine the value set repository working to standardize the machinery, working with NQF on the measuring
authoring tool so that the process of quality measure development can go from cottage industry to a little bit more of a machine line, assembly line. Standardizing the outputs of that, standardizing our assumptions about the inputs to that, working with the vendors on certification that is much more rigorous that separates out the tasks of collecting, calculating consistently so that in the future, not 20 years away, but two years away from now, you can get to a point where charters are almost like platforms that can accept quality measures. They don't have to be hard coated and hard tested to each and every measure.

And yes, at the end of the day, the data elements and hopefully a parsimonious and smaller and slimmed-down set of quality measures that does away with those considers and does away with those exceptions and exclusions that can't feasibly be collected on every patient but those are actually collected
then as a routine part of delivering care.
And that is going to need a lot of that you
talked about, of starting with workflow,
workflow, workflow. Engaging the whole team
so it is not just the frontline clinician who
has to get all the data in place, making sure
that there is feedback.

If there is one magic bullet for
data quality assurance it is feedback,
feedback, feedback, so that they see the
elements that they are putting in actually
being used and reflected back to them. And
the good news is that we had made progress on
every one of those elements, pretty remarkable
progress I think in the past couple of years.
And we are going to continue to make progress
with your help.

And we have, really, a shared commitment
I think within the department and with you and
with important stakeholder groups with the
health plans, with the healthcare providers on
the need to get there. The road is hard and
long and the future is worth it.

Thank you.

(Appause.)

DR. KENNEDY: Thank you very much, Farzad, for those insights and I think it sets the stage, too, for some of the questions for Dr. Butt in terms of what he presented related to problems and integration of those in the electronic health record.

So we will open the floor up for a Q and A. I think we are changing it a little bit. Maybe we just open the floor before people forget what you presented.

So I do have a couple of questions to more or less get things going. You said that up-front you didn't really look at the quality measures in terms of the problem list and the condition list. And on the back end, when you went back and looked at it, just two questions. Was it a line? did you see a big gap between what you normally captured in terms of diagnoses for care delivery versus
what you needed for quality measurement,

number one?

And then number two, you talked

about data granularity and needing attributes

around the problems and the conditions and

what kind of opportunities and challenges did

you see there?

DR. BUTT: So I think that we do

capture most of the diagnoses accurately

because they are, as I said, first sort of

documented by the patient themselves or they

are pulled from a record that we received from

someone. The physician reviews them. So the

diagnoses are captured properly. The issues

was that if you have a diagnosis that is

active within our system, which lets say a

hypertension is an active diagnosis if there

is an onset but no resolution date, that it

gets into the measure and it is not

necessarily the measure that is reflective of

our practice.

So you know when we get into
performance-based measures, then I think it will be important to know how we tie those measures that we can be attribute to us. In other words that reflect the care that we delivered. So I know that later on we will talk about possibly one of the gaps being the specialty type of guidance but even within primary care this issue of attribution is more important.

In terms of the attributes, I think that generally most of the attributes are captured. There are these little subtle nuances maybe I think this inactive one is a big one because the QDM currently defines inactive sort of as a separate state than resolved. I mean resolved can be presumed to be inactive but inactive can be before a problem is resolved. So those types of small things need to be resolved in terms of the harmonization.

DR. KENNEDY: Any other questions?

DR. LARSEN: Yes, so I am Kevin
Larsen. The goal of the problem list is for it to be a tool for you and your care team and your patients to all be thinking together and making an active plan of care. The goal isn't for it to be a tool for building and the goal isn't for it to be a measurement tool. We are hoping to leverage it for those things.

So how do we help your partners and your practice? What do you need from your technologies, from the measures that helps the problem list be a tool you guys want to use and really provide value in your practice so that we can then really rely that because it is used and because people like it, it is accurate, not that we force people to make it accurate.

DR. BUTT: I think that is a very good point and I think that the value in that is really, in my opinion at least, two-fold. One is, as you saw in that assessment plan. So that is a new thing for our physicians to get used to because before it was a narrative
consult. And sometimes we have partners who would generate a five-page note and the primary care would call back and say what are you saying in this.

So I think we are truly now getting into that problem-oriented medical record and it is very refreshing because you can actually select the problem and then you can tie the orders and the medications to that problem and you can define the state of that problem. So it really is, even when the note comes out, it is not very pretty because the poles and that looks prettier, but the primary care actually have called back and said yes, it is not pretty but I actually get more out of it because I know what your thinking is and how you are tying your management to the problems. The only issue that if it could be improved and I don't know if it is an EHR vendor issue or how, is that right now the assessment is one problem at a time and sometimes the assessment is combined.
other words, you have diarrhea and abdominal pain and we now have to sort of select them separately and then repeat the same thing.

And it is not as clean-cut. So maybe some way of combining problems in that assessment. So for us, that is a very important piece. And in the future I am hoping that the clinical decision support tools that we might leverage out of the problem list would be the other carrot for us.

Does that sort of answer your question?

DR. LARSEN: Thanks.

MS. SPIRO: Shelly Spiro from the Pharmacy e-HIT Collaborative.

I want to applaud you for making that change to the problem list because those of us who are working in other types of practice setting, especially pharmacists and other healthcare providers, such as in the medical home, really rely on the problem list.

And if we can't get that information from the
primary care physician, it is so important to integrate that because as you said, with medications or linking the problem list to other areas is such an important piece. Codifying it, I think to answer Dr. Larsen's question, I think codifying it to your SNOMED or your problem list to ICD-10 for your workflow on billing will be the solution for the future. I think that will sit behind the scenes once our system vendors begin to use that method. But I want to applaud you for making that step, a really important step in helping us alternative clinicians who are working in other types of practice setting, that information is extremely useful to meet our quality measures.

DR. BUTT: Thank you. And I just again I agree with what you are saying and certainly what Kevin said that it looks like the problem list is going to be much more of a dynamic tool for a physician to take care of the patients and that is where the dilemma is
in terms of when you have that sort of a
dynamic type of list, how do you try to
convert that into some kind of an encounter-
based diagnosis with ordinality and stuff like
that, which is really necessary for the
measurement? Much of the measurement keys off
of those lockdowns of that. And so that is
where that is connection is going to have to
be. And measurement usually because sometimes
people use SNOMED/ICD interchangeably but it
is not really in that sense that one is a
nomenclature and the other is a
classification. And often quality measurement
keys off of classification type of data and
more encounter-based data to define
denominators and so forth.

In the inpatient setting the
ordinality becomes an extremely important
principle, especially for outcomes measures.
Potentially for process measures, you could
potentially use -- like for example CHF. If
you are looking at process measures that say
if your patient had active CHF in the
hospital, does it really matter whether it was
number two or number one in process measures?
Did you do something for an active CHF
patient? Probably not. So in that sense it
is not as important. But if you are looking
at CHF mortality rate, it is probably
important that it be the principle diagnosis
if you are going to try to compare or you have
such good severity adjustment system if a
patient has principle diagnosis of something
totally different.

And so there is sort of debate
around that but I am saying there has got to
be some sort of resolution to that issue of
the problem list being somewhat of a more
dynamic list that is more expansive and used
mostly for clinical. How do you leverage that
to feed data into the quality measurement side
because they do have some of their constraints
in some of the measures that need that data.

MS. CLASS: I just had a question
if you had discussions around the example you
brought up as you discussed having patient-
centered measures and thinking about the
patient and valuable information and feedback
to the provider. So if you take your
hypertension measure you mentioned and for
your specialty providers to be held to
managing the blood pressure is probably not
their role. However, is their role to say
that they communicated to the patient about
they should talk to their primary care
provider about their blood pressure and there
is some concerns? And did you communicate to
the provider about that blood pressure measure
or that blood pressure and the concern about
it so that the role isn't necessarily for you
to fix it but the role is for you then to do
that handoff, that transition of care pieces.

Has there been discussion about
how though a measure may be the same measure
the role of a different provider may be a
different role piece in how you actually look
at the accountability pieces around those?

   DR. BUTT: I knew Marge was going
to ask the tough question. She is from the
Tricare Military Health System. I think that
is an excellent point and really that is to
some extent embedded within meaningful use
like obesity and smoking. Not as much in
hypertension but I think your point is well-
taken that all of us need to be sort of -- all
of us need to feel like we are part of the
team trying to do the right thing and we may
have different roles for the condition. And
as specialists we shouldn't assume that
because it is hypertension it is somebody
else's business. Yes, we may not write the
script or change the medication but we should
at least inform the primary care physician
that this is what the blood pressure was and
yes, I think that is the stage we need to get
to. We are not there yet.

   MS. MEADOWS: Okay, we can take
one more question.
DR. SOBKO: I'm Heather Sobko from the University of Alabama at Birmingham. We are struggling with the issue between conditions and problems or diagnosis versus symptoms. And what we are finding is that for example just using hypertension it can be controlled but it never really goes away if it is associated with CHF or an endocrine problem or is part of your chronic kidney disease. So the active versus inactive list, just because the problem is not having symptoms that are exacerbated right now doesn't mean it is not an active problem that is being actively addressed and controlled and managed. So that is just been a huge challenge for us and I was wondering if may be you had some insight or ideas that you could share.

DR. BUTT: I think that this concept of inactive obviously is a difficult one. And so the QDM does that have that as a placeholder and it is very hard to operationalize it, as you are pointing out,
especially on the inpatient side even harder.

So I don't know. I don't have a very clear answer. I mean clearly when the inactive is coterminous with resolved, there is no problem. It is that it in-between state that when do you term something inactive. And I think Kevin probably has some insights into it or Ted?

DR. PALEN: Well actually if a person -- it could be that the hypertension is controlled. I mean, they were diagnosed with hypertension at one point and now they are on meds to control it. They still have hypertension. The only reason that it is not elevated is it is controlled. And it is the same as prostate cancer or any other cancer, if you are still actively being treated or a surgery is planned or you are getting Lupron injections every three months, it is still prostate cancer as far as coding is concerned because it is still under treatment.

So if there is still drugs used to
treat something or there is still active planning and treatment strategies, then that is still an active diagnosis and that is how it has to be thought of.

But as you presented in your presentation, there is a lot of training around this. And who gets the training? Well the whole care team from the MA to the specialist has to have the training.

DR. LARSEN: And I will just comment that I have been part of a really active discussion around this issue through a number of CMIOs for quite a few years. I previously was a CMIO at a health system. And a lot of my peers were moving to think that past medical history had no real use in modern e-charting and they were moving to a fully problem list-oriented model with attributes of problems. And that we are moving to instead of each individual creates their own charting and that artifact lives forever, it is like a Wiki and that patient care, each patient's
record is its own Wiki and we all are responsible for editing and updating.

So Oregon, OHSU, was looking to just decommission their past medical history in their record and instead provides these whole range of attributes to problems like certainty. How certain am I that this thing has happened? That is partly why we have diagnostic terms and problem lists because we don't yet have clinical certainty. We know we are managing diarrhea but we don't yet know if diarrhea is sprue or we don't yet if diarrhea is infectious. We just say it is diarrhea until such time as we actually find a diagnosis like sprue.

Those things should be related. There should be uncertainty. The more you get certainty, the more that certainty should be related and if, as most conditions go, they kind of wax and wane through life, they aren't really -- diarrhea is probably never fully resolved. It was part of what happened to
you. So it moves into a more quiescent phase
and then becomes more active.

So this whole sort of dynamic
documentation is the, I think, conceptual
model that I have heard a lot of my peers
articulate. We don't yet have tools to
support that and we also don't have the sort
of training and common understanding for that.
But as I look ten years down the road, those
are the people that I am hearing and that is
the way that they are thinking about how this
will evolve.

MS. MEADOWS: Thank you. And
thank you, Dr. Butt for being so flexible. We
are going to get back on track now and Peggy
Pollard is going to talk about the experiences
they had at CentraHealth more from an acute
care point of view.

MS. POLLARD: Am I on? So it is
a pleasure to be here today to talk to you
about the journey kind of for a community-
based hospital.
First I would like to tell you that I am highly allergic to the Asian ladybug. So if I cough you will know why and my first message to you is that the little eagle has landed.

Centra is located in Central Virginia. It is made up of four hospitals, 600 acute beds in our Lynchburg area and then we have a small community-based hospital about 60 miles away with 110 beds. We were challenged to a test for Meaningful Use by October first of 2011. So we were on a very fast paced journey which has caused us to do some things initially evaluate and then do kind of an iterative process.

We are a level II trauma center; we see about 130,000 visits in our ED; top cardiology, top orthopedic. I bring up the Stroke Center of Excellence because we were trying to achieve that status at the same time that we were working on Meaningful Use. So by aligning those two initiatives, we were able
to add value not only to the Meaningful Use work we were trying to achieve with those clinicians in that group of caregivers but to help them achieve their goals at all. And anytime you can make it a win/win, your adoption rates are going to be far higher. Magnet, most-wired, and most-wireless, which is kind of an oxymoron it seems, and the first to achieve Meaningful Use for our vendor. So our motto is excellent care every time. And so with that I say that all of us have chosen healthcare and that is not just a job. It is not just a profession. It is more a calling and this is our legacy to what we are leaving this country. So it is very, very important and something we are very, very passionate about.

In 2004, we signed a contract for 24 applications to bring in advanced clinical technology into the organization. A 15-month time line, we implemented 24 of those applications at two campuses at one moment in
time for 6,000 users, including barcoded drug
administration across two hospitals on a
single day. We were easily able to achieve 95
percent barcode scanning rate within the first
six months. It is something that nurses
become passionate about as they see the safety
values.

In 2007 we brought up CPOE for the
two Lynchburg campuses' voluntary adoption.
And it was really through a group of what we
called our physician technology group who took
ownership of the content in helping us build
clinical decision support into the order sets
and into the advisors that we built that they
became real champions of the system. We were
able to reach like 75 percent adoption rate
very, very quickly without med rec which was
still on paper because they began to see the
value and champion it themselves.

In 2009 we had purchased the
hospital 60 miles away and were challenged to
change their vendor and to bring in the more
uniform set of clinical applications we had.

So on a single day we brought in 30 applications and introduced that to our Southside campus, including barcode scanning and medications. The interesting thing was our hospitals were asked at that point in time to start staffing that hospital as well and they refused to go unless they could take CPOE with them. They would not go back to paper.

So at that point we knew that they really then had embraced the power of the technology.

So in 2011 we were the beta partner for Meaningful Use with our vendor. We went live on May 14th and began our 90-day reporting on June 27th. So we had 45 days to complete the final pieces of our bill and to be ready to report.

We had tested on September 27th for all campuses the same day. We had received IT functionality scores of between 97 and 99 percent on all of our IT functionality.

I will tell you that the one that
we had the most trouble with that was that was
the problem list for the IT functions. And it
is for the same reasons that Dr. Butt talked
about. Who owns it? Who does it? How do you
manage it? And how to you introduce it into
an organization. And we have always had the
motto that if you make it easy to do the right
thing, people will do the right thing. So
when we had built those order sets in 2007,
particularly our specialist had added the most
frequent diagnosis to their order set and it
was picked as a free text but that was a
communication to the care team and it was a
communication to coders of what they were
actually thinking on this patient.

When we took that away from them
and then gave them a SNOMED search, what we
found was we actually lost the specificity of
their diagnosis. Now they were picking CHF
rather than the more refined diagnosis they
had been doing because it wasn't as easy to do
the right thing. And so that is one of the
things that we have really challenged
ourselves is how do we make it continue to
make it easy to do the right thing and still
meet the measures?

Quality reporting, of course, was
the other really upstream adventure. But we
had already completed a lot of the work for
the IT functionalities and felt pretty good
about it. We gave 260,000 doses of
medications barcoded each month at about a 99
percent rate. Our anesthesiologists use a
different system so their meds aren't captured
in this number, which accounts for the
difference. Eighty-two thousand orders were
being entered every month by physicians.
Prior to CPOE we had had a pulmonologist who
was handing out articles saying how dangerous
it was and we shouldn't be doing this and why
in the world were we considering CPOE.

Quickly, his group was one of our
pilot partners for this. He became a true

Neal R. Gross & Co., Inc.
202-234-4433
gives talks on the improvements that they have
been able to give in care using CPOE.

So once they embrace the
technology and you can introduce the clinical
decision support that helps them do the right
thing, you really have some passionate users.

We were able to do improvements in
the early diagnosis of conditions such as
community-acquired pneumonia versus the more
complex pneumonias by having them do problem
lists and having them answer some questions as
part of their order entry that allowed us to
drive them to the core measures and to the
appropriate medications. We made that as an
advisor. It was not mandated that you use it
because our pulmonologists in particular had
said don't make me go through this flow. I
already know what I am supposed to. So we
made it voluntary but we find that over 85
percent, even with the pulmonologists, all
diagnosis for pneumonia go through those
questions because they have found that by
doing that they stop and they think it makes them be much more definitive in the pneumonia and choose the right treatment. And we were already working towards that stroke center of excellence so we were able to champion those users in that process to drive the quality measures there.

So here was the challenges that we face as an inpatient setting. Who owns the problem list? Since we put in CPOE, the physicians have really owned the problem list because they were picking it as part of their admission assessment but it was free text. When we moved it to a searchable SNOMED codes, it took far more time and we saw their adoption of it drop dramatically. So of course nurses then were used to kind of shore that up until we could get them back on track.

Doctors didn't know SNOMED, coders didn't know SNOMED, and nurses didn't know SNOMED. So the nomenclature that we had picked was foreign to everyone. And so what
we found was once again the specificity of what was being picked was far more generic because they weren't sure how to do the translation easily. And so that was one of the biggest challenges I think we had in the whole process was trying to get them to understand this new methodology for picking the correct thing. Doctors felt that since they didn't have that quick pick as part of their order sets that they had built, they had designed, that they had taken a step back.

Initially the problem list became far, far more generic. One of the challenges based on what Dr. Butt was saying is when you are starting out on the Meaningful Use journey and you are seeing these patients for the first time, getting the problem list is easier than that second and that third admission. Because I probably get 40 calls a month from hospitals saying who do you do problems? How do you do quality measures? We are really struggling with this. You know, most
hospitals I can tell you that call me are having nurses do the problem lists. And so they are getting the nurses to do the initial problem lists and they feel pretty good about that. But when the patient comes back in and they are doing that as part of that admission, then the nurses do not feel comfortable saying is this resolve, is this chronic, or is this acute. So at that point, it becomes a very static list because the nurses do not feel comfortable updating that kind of differential designation for that initial condition.

IT functionality versus quality needs for the problem identification, how do we align the EMRs to make the clinicians easier to do that right thing, to do that more specific diagnosis that gets us to more acute and pertinent clinical decision support. And then the quality measures were perceived as far, far harder to implement than the IT measures. And I think because it was very hard for clinicians to understand the logic
behind what counted and what didn't.

I would have a physician say to me
I picked stroke. What happened that they
didn't count in this measure? Well they
didn't pick atherosclerosis. So they would
fall out of the denominator because they
didn't pick the two. And he is looking at me
and saying, if I picked occlusive stroke,
Peggy, then did I not say they had
atherosclerosis? I'm saying you had to pick
it for it to count. You had to select it.
And they are saying well that is ludicrous.
You just made it hard for me to do the right
thing again.

What went really well was rolling
out the quality measures and the IT
functionality incrementally as we were ready.
We had already done barcode scanning so we had
that. We had to shore up to make sure that we
were doing the same things in the ED as we
were in the inpatient for some of the measures
but that was kind of a given and we could kind
of check that off the list very, very quickly
that okay we don't need to concentrate on that one.

CPOE, we knew we had that number.

One hundred percent of our lab was structured in the database. So we could narrow down the list of what we needed to work on for Meaningful Use by what we had already done and what was left to achieve.

Engaging staff, and I should have put here administrators early in the education. Every IT functionality, every quality measure had an executive owner and we gave them a score card once a week and it was a stoplight for their measure and it was red, yellow, or green. If they were green, they loved going to the Thursday senior executive meeting because they could wave their paper and say we are good. If they were red, then they were accountable for why are we struggling with this. So it kept them very, very engaged in the process and in the changes
that were taking place.

Monitor towards continuous improvement. For months before we started reporting and before we actually even had our final certified code, I was running reports out of the system every four hours. Had the nurse picked the smoking status on admission? Had she said if the patient had an advanced directive? Did we have a height, weight, and a blood pressure? Had they done the medication list? And so we would call those floors. My staff would actually call the floor and say hey, it looks like Peggy has been here for 23 hours and nobody has filled in this information yet. And we gave that to the charge nurse and really gave them ownership for making sure that those things were due.

So by the time we started reporting, the nurses that yes, yes, yes, if I don't do it I am going to get a call from Peggy. And if I don't do it then, she starts
calling up the chain. So we were able to get
some rapid turnaround on those.

And then again, very critical was
the executive support.

What we as a community hospital
feel is needed. A consistent criteria. One
of the things I was talking to Ms. Kennedy
about prior to coming here is we are working
on an ANA Tipping Point project around
pressure ulcers and the prevalence study that
we have to do for that. For that particular
study, the criteria for the restraints is
behavioral and medical that you have to fill
out. For CMS, it is violent versus
nonviolent. So which one is the nurse
supposed to chart in the system? If we are
going to pool these things electronically we
have got to get to a common core set of what
we as clinicians feel like what is important
and it should be the same thing for CMS, for
nursing, for PT, for cardiology, whatever.

There should be one thing. You know, if it is
what is best for the patient, it should be
best for everybody that is measure it.

Discussion agreement from the
eMeasure Collaborative on best practice. I
think we would all sit here and say that best
practices for physicians to maintain the
problem list. You know that would be the most
accurate and it would really give us the best
defined picture of a patient. But if we can't
do that, then what are some best practices
that we can put in place to ensure that we are
doing justice to the patient and to their
health.

Documentation of the logic used by
the vendors. For the quality measures, I need
to pick up the phone and say okay, help me.
Walk me through how we are figuring out this
VTE or this measure because it is very
complex. It is very behind the scenes and the
clinicians don't understand it so they have a
hard time believing and trusting the numbers.

And then I applaud the extension
for Meaningful Use 2. It is very nice to have the time to implement it the right way. Once again, if can do the right thing for the patient, most often clinicians are championing the cause and right behind you.

So I see this as a partnership and I want to tell you a story about these two little boys. They are my grandsons and that is Thomas and Brady. And they just moved to a new city because their dad got a brand new job and they were really missing their friends and where they lived. So my daughter-in-law has been taking them to all these fun places in their new area to try to encourage them that this is going to be a great place to live. So this is actually an outdoor museum. And on either side of these as you walk down this trail there is a teepee and there is a colonial village for them to see. And all of a sudden out of the blue, the seven-year-old Thomas reaches over and grabs Brady's hand. Well of course, this does not happen often.
You would usually see them on the ground wrestling. So my daughter-in-law captures this picture. She said people were actually stopping to watch them and saying awe, aren't they cute.

Then all of a sudden Thomas, the seven-year-old, looks over at Brady and says, "Brady," -- and Stephanie says, I just wait for the sweetness -- "have you ever been convicted of a felony?"

(Laughter.)

MS. POLLARD: To which the four-year-old says, "No, but I went to prison once."

(Laughter.)

MS. POLLARD: And you think where did they get that? Where in the world did that come from?

Well Brady was enrolled in a new preschool when he got to town and Stephanie and my son, Chris, were filling out the paperwork for that. And one of the questions
is has your son ever been convicted of a felony. Now they are asking this about a four-year-old. Now I hope that is not an omen for the future. But Thomas had overheard them having this conversation about why would they be asking about a felony and what four year old has ever been to prison. So he had picked that up and had processed that for days and days and days and so that was the conversation between the two.

But I think in this journey towards these quality measures, towards this Meaningful Use, we do the same thing. We kind of look at each other and say where did that come from.

So I hope none of you have committed a felony in this process. I hope none of you have gone to prison. But I do think that we have got to hold hands and keep going down that road towards making it better for the patient every day.

And so the opportunity is to add
value to patient care in what we do. to move it from excellent care every time to better health all the time. Thank you.

(Applause.)

MS. MEADOWS: Peggy, thanks so much. That was a great talk and thanks for the humorous interjection. That was really a good break for everyone. So questions for Peggy?

DR. STUMPF: Dave Stumpf. Could you describe a little bit more your technology assessment score? Because at 97 percent it sounds like you have got all the problems solved.

MS. POLLARD: Well you know, like I said, I run reports every four hours and somebody is working those seven days a week to ensure that we are meeting those.

But for the barcoding we had already done that. Lab work we had had discrete in our system since 2005. For the medications and the problem list, our pharmacy
will not fill a prescription unless they have the allergy. So that had instilled in our nurses that that better be the very first thing you do because if the pharmacy doesn't have an allergy in their system, then they are not going to send up your meds until they have it. So we had had that for about four years.

DR. STUMPF: What is in the score is what I am driving at.

MS. POLLARD: Pardon me?

DR. STUMPF: What I am driving at is kind of what are you measuring with that score?

MS. POLLARD: That score is actually coming directly out of the system as to the percent of unique patients that have that IT measure documented.

So for medicines they have to have an active problem list that has been updated during that encounter. For allergies, they have to have one codified allergy or the fact that they don't have any allergies documented
in their system. They have to have an up-to-
date problem list that has been documented
that has been addressed during this particular
encounter.

The height, weight, blood pressure
has to have been done during this encounter.
The demographics have to be in the system for
the language and all of those demographic
features. So the smoking status is how many
patients came in and how many had it charted
within the episode of care.

So the IT functionality is very
prescriptive in how it calculates those
numbers. And then again like I said, the
quality measures there is a lot of if then
kind of statements that are algorithms in the
background that the vendor helped code into
their system to help you know whether or not
this patient actually qualifies for the
measure.

MS. MEADOWS: And just to further
expand on that, the nomenclature may be a
little bit confusing as Peggy refers to IT measures. She is really talking about the meaningful use objective and what the measure and denominator and numerator criteria are for those objectives. That might help a little bit.

MS. SWANFELDT: Good morning.

Melissa Swanfeldt from MEDITECH.

How did you get your nurses to do the problem list? That is something we get a lot of pushback from our customer sites saying nursing problems are different than the patient problems and they should not sort of be managing that. So I am curious how that --

MS. POLLARD: We actually had a real long discussion about that. Our nurses don't feel like it is within their scope to enter medical problem. They want to make it nick knock nander or something that they have learned and feel comfortable with.

So we kind of took a multi-pronged approach. We worked with our OB doctors and
our pediatricians for the nurses on the floor
to be able to do the laboring patients problem
and the newborn's problem because they are
very -- they are pretty common and they knew
what to pick.

For about 68 percent of our
patients coming into the hospital come through
the ED. So the doctor at the time that they
had dispensed the patient, the dispo-to-admit,
they pick the reason for admission. And so
they were taking that that the doctor had
picked out of one system and actually then
just reentering, the rapid admit nurses were
reentering that into the system. So they felt
like they were picking something that a doctor
had already said.

For those that don't fall into
that, it is my staff, the clinical informatics
staff, that is actually entering the problem
but we are quickly moving to the physicians
doing it themselves. We have probably about
50, 60 percent now being entered by doctors
themselves and by the end of the year it will
be mandated that they have to enter them.

MS. MEADOWS: Thank you. Kevin?

DR. TINOCO: Thanks, Kevin. My
name is Aldo Tinoco. I am with NCQA and we
develop quality measures for our different
programs and also for other programs that you
have heard about today.

I really appreciate this
conversation because as measure developers,
even those of us with health IT experience, we
are making a lot of assumptions as to what
goes in a problem list, where these diagnoses
that will work right here are actually found.

So this is very revealing. It
also takes me way back to my days in residency
when I was maintaining problem lists at the
VA, one of my first experiences with EHR
systems.

To your point about who owns the
problem list, I would like to encourage us to
not think about who owns the problem list but
who owns the individual problem. Because as
a physician, I would be very reluctant to
change the status of a problem that I wasn't
specifically taking care of. So there is
another layer of detail here.

MS. POLLARD: Absolutely. There
is another layer.

DR. TINOCO: Secondly, we would
love to hear the stories about your CPOE
experiences and adoption rates. My question:
How does the problem list, and the information
in the problem list, feed into other EHR
functions within your institution? For
example, must a provider select a problem from
the problem list as a reason for a medication
order or is a problem list just a nice to have
quick reference list in a chart that achieve
Meaningful Use?

MS. POLLARD: It does not at the
moment. It will when we automate the med rec
which is our very next project that starts in
October.
We have really done it by having the physicians own the content and so there is a lot of decision support. If they pick that the patient has a stroke, then it fires off alerts to them that hey, you haven't done this yet or you haven't ordered this and allows them to pick whether or not it is appropriate and why. It sends off a nurse alerts that they helped us write that say now you need to do this education. You need to make sure you go over this med with the patient. So we have kind of done it as an alerting system without being overly burdensome with alerts to say here is what is really important and caring with that patient and present that back to them as part of their natural workflow. But it is a challenge.

DR. LARSEN: I'm going to actually disagree with Aldo. I think we all own the problem list and I think it is the patient's problem list.

MS. POLLARD: Yes, it is.
DR. LARSEN: So we actually socialized that pretty aggressively where I came from and everybody got to put problems in the problem list and everybody got to edit problems in the problem list. You were instructed about what your scope of practice was and so you were responsible for your own scope of practice. It was always documented who had one that update, so it was crystal clear if it was a medical student or a nurse or a doctor, or a specialist or primary care. But everybody's job was to maintain that and keep it active and fresh.

And so that is a hard socialization because we are used to not playing in the one sandbox. We each play in our own sandbox. And then we wonder why we are not coordinating in the middle.

So anyway, that is an aside. My question for Peggy was you really wanted to be able to see the logic and see details of measures. I wonder if you would describe
your frustration a little bit more and then
help us think about what would be the tools
that would help support you as you go and
implement these complicated behind-the-scenes
measures in your organization. What would
make that easier for you?

MS. POLLARD: Well you know, if
you look at the HPSI spec, there is a lot of
if then kind of logic; which patient falls
into the measure, which one falls out, their
age, their diagnosis, lots of different
things.

So one of the things that our
vendor helped provide us that has become very
useful but it was kind of late for us because
of course we were the beta is flowcharts for
each of the measures that help walk through in
kind of a picture form about here is -- if you
answer yes or no to that, then this is how you
would fall in or this is how you would fall
out. It really helps to be able to take that
to a meeting with clinicians to say this is
why this patient didn't get added to that
denominator or to that numerator. But those
visual kinds of things to help us kind of walk
through that logic have been invaluable in the
process.

MS. MEADOWS: And just to let
everybody know, we are going to go until
10:15, since we had a little bit of a late
start plus an interruption.

I have a question before you go
from the internet, so from the folks on the
phone. So it kind of goes along with what
Kevin was talking about about who owns the
problem list. Are nursing problems added to
the problem list or do they remain just on the
interdisciplinary plan of care?

MS. POLLARD: We actually separate
the kind of medical problem list from the
interdisciplinary because the
interdisciplinary really often has to do with
just that episode of care. You know, the fact
that the patient is on a medicine and it may
make them dizzy or they need to be rehydrated.

But it is not something that goes with the patient beyond this small window.

If it is something that is going to be chronic or something that needs to be addressed across the continuum of care, absolutely it goes on the problem list.

DR. PALEN: So I think the tension here -- I'm Ted Palen from Kaiser in Denver, for those who don't know me.

The tension is the historical nature of a problem list and now moving into this new era. The problem list is being used for a lot of things, including care plans. Ideally, and you know, you think of the care plans, the nurses think about totally different things than a doctor would think about in a care plan. A doctor would probably think more in the course of a treatment plan or an algorithm of treatment, especially think of oncology and think about the complex treatment algorithms in oncology. And I am
speaking to the vendors in the room here. What really we need is a dynamic problem list that is the problems but is also linked to the care plan, treatment plan, and the flow sheet you are talking about. So you are not in four different places entering this stuff but it is a stream of consciousness so to speak in an EMR that allows the problem list to be yes, a list of problems, active/inactive, resolved, deleted, an entry but also linking to everything that is really going on with that patient. And then think about a patient-centered problem or care plan, or treatment plan where the patient is participating from home, basically, entering their own PHR type of information.

That would be the ideal to have that all linked together. Talk about Meaningful Use! There is some meaningful use if we can get that. And again, I am speaking to the vendors here.

MS. POLLARD: Well it also makes
it easy to do the right thing.

    DR. PALEN: Oh, yes. She

mentioned the inpatient/outpatient. But yes,

it goes without saying on that.

    MS. POLLARD: Yes.

    MS. BARTON: Hi. Can you hear me?

    MS. POLLARD: Yes.

    MS. BARTON: I am Cynthia Barton

and I worked at Oklahoma Foundation for

Medical Quality and I am one of the eMeasure
developers. And I have a question about you

were mentioning about the algorithms that

would be helpful.

    What we use to develop the

eMeasure or the specifications that are used

for the paper measures, what we have used for

the SCIP, pneumonia, the AMI, I'm trying to

think as because I worked on the SCIP, are

available on QualityNet and so I don't know.

I mean, I am sure you have access to those but

would be helpful? Would it be helpful to

somehow, I mean I don't know how this could be
done, to attach those or to just let you know
that they are there every time? I just can
only speak for what we have done at OFMQ.

MS. POLLARD: Sure. I think
anything that provides information that a
hospital or a physician practice doesn't feel
like they have to do it themselves or figure
it out themselves is of tremendous value and
it helps us standardize, if we are all looking
at the same documents and working on something
towards the same way.

MS. BARTON: I know that also we
are going to be working on additional measures
that most of what we have done were developed
by OFMQ but I think at NQF or on the NQF site,
there are the measure information forms and I
am getting ready -- we are getting ready to
work on the measure that we don't actually
have an algorithm for yet but I think that --
I mean, I don't know other than my own
experience but it is helpful to know. And I
don't know how that can be attached to what we
are doing because our output is from the
measure authoring tool. But that is good
information.

DR. BUTT: Yes, I was just going
to add to that. I think what Cynthia is
referring to is that in the retooled measures
the original measure specification manual has
very nice flowcharts and algorithms in it,
which are used for the sort of so-called paper
measures.

I think what we are saying is that
eMeasures hopefully as we go forward will
become de novo measures should have a similar
framework which is currently not there. And
I think that was in one of the summary slides
that I mentioned that there was that question
about the English version of stuff and so
forth. So I think it is kind of like that so
there needs to be a framework similar to the
specification manual that describes in more
plain English to people who are sort of
implementing and not necessarily as sort of
familiar with the HQMF or the back-end stuff.

MS. MEADOWS: Something like an

implementation guide, right? We get

implementation guides for many of our other

standards. This would really help and those

data flows from the measure developers would

be invaluable, I think, for all of us.

MS. BARTON: So as we go forward,
as we are building de novo measures and going
straight to the eSpecifications, it is good to
make sure that the people that are working on
those provide that kind of information also.

MS. MEADOWS: Absolutely. Thank
you, Cynthia.

DR. SNYDER: Hi, Chris Snyder.
I'm a CMIO and also a hospitalist Peninsula
Regional in Salisbury, Maryland. Not too far
from here. A frontline guy.

One of the things that I hear you
guys talking about a lot is the relationship
of a single entity with multiple entities. So
CHF patients, for example, are classic
problems that we deal with all the time and I review a lot of coding charts to look at medical necessity, make sure we get our core measures correct.

I think one of our biggest challenges is what Ted hit on and I think that is a key element for physicians is you put my brain on paper. I don't think of just one element. I typically think of the interrelationship between multiple problems. We don't have a good way of taking that to initiate a plan of care. Because I will be honest with you, when I treat heart failure, I am typically treating 12 other things and they all overlap and there is a huge amount of, I guess, artistic capability within that. I don't know how to put that into words. I think Keith would probably have a lot better job at that. But some of the things he said, it is not our list. It is a patient's list. We are managing it basically for them and advising them on it.
The interactions that each service has is based on their source need. So as a doctor, I control the majority of it but as a home health agency, I would want the information I needed to perform my tasks for that day also because we are all individual, honestly.

And as I work on multidisciplinary teams and I am trying to educate people on what I want the physician driving the care for the patient who owns the care because they live it every day is very challenging.

So I think we need to do a better job of that problem list and I applaud Ted for asking the vendors we need you all's help. We need a tool that is very simple for me to see a big picture of what is going on and how they relate. And then suggestions based on hey, you know, what, the orthopedic patient who has got a creatinine of a 1.8 probably shouldn't get that Toradol post-op. It is probably a good idea that I would know that, especially
since they had an encounter three months ago
with a nephrologist I knew nothing about.

So we have a very difficult -- we
have to get a central repository for
information where I can practice the best
medicine and advise my patient that they can
take that information wherever they go. And
I know that is pie in the sky but that is what
I want. And this is a big group of smart
people. And there is a lot of vendors and
they will tell you guys, this is not rocket
science. We are not really that smart. We
just work well with good information.

MS. POLLARD: You know I think
what it really comes down to is the first step
was actually getting the information in the
system. And now that we are kind of getting
everything in the system, we are beginning to
see how we could leverage it to truly impact
healthcare. And so that is the next step and
you do eat the elephant one bit at a time.

So this is a journey but Dr.
Snyder is right on. We don't treat just CHF or just the hip. In the hospital we are treating the entire -- and in the office particularly -- the entire patient. And most of those things have relationships and impacts on each other and somehow now that we have this data in the system, we have got to figure out how to be able to leverage it towards better care.

MS. MEADOWS: Thank you so much, Peggy. And thank you too, Zahid, for great presentations. Great discussions from everybody. Let's give everybody a big hand.

(Applause.)

MS. MEADOWS: I think it is time for a break and how long are we going to take Rosemary?

DR. KENNEDY: With that, we will take a 15-minute break.

The restrooms are straight down the hallway to the wall and turn right.
matter went off the record at 10:15 a.m. and resumed at 10:30 a.m.)

DR. DERR: The next panel is on medication management and I realize it came up a lot of times in the first panel. It will come up all the time because the different groups that I am on, the physicians always say the first thing they want is medication reconciliation. Don't give me anything else until you give me that.

And med management is across the whole spectrum of care. And I use the word spectrum instead of continuum because we really take care and longitudinal care person-centric medicine, whatever is needed, at the right time, at the right cost, at the right acuity and continuum connotes an episodic type of environment where there is a start and a finish. AARP did a study in 2000 and us old guys determined we didn't like continuum because we don't like the finish.
So John Derr is my name. I help Golden Living on strategic clinical technology. You notice I used the word technology and clinical in the same sentence because I think those two functions have to be harmonized. The day of the IT department being a slave to operations or clinical I think are over. They can help you if their knowledge of technology in how to provide better care and to provide better clinical outcomes.

My experience, I am a pharmacist. I first had -- for almost 50 years now I have been in healthcare. My first position was with Squibb where I ended up head of product development and also strategic planning. Then I went to Searle and Siemens and was head of radiology and imaging for the instrumentation part because I thought healthcare should be systems, not individual silos which we are finally figuring out some 50 years later, I think.
Then I went with Tenet, which at the time is called National Medical Enterprises. I was head of product development for international hospitals.

Then I went into an entrepreneurial phase where I started four companies. And then after that I worked a little bit as a consultant to Bruce Laughrey at MediSpan. I changed MediSpan in the '90s.

Then I became the Executive VP of American Healthcare Association right after PPS was done in '99 and helped to try to cut down the number of cuts that were being given to nursing homes. I figured long-term post-acute care was the place to settle in my later years because it is a place where the total person is taken care of. It is not a bunch of specialties and that but we take care of the total person, which in my estimation is longitudinal care.

In 2004 when President Bush's Executive Order to do the HIT electronic
health record, I was in the audience and I said to Secretary Thompson, please include us in this whole thing and not just hospitals and doctors and that. And he said, okay, John, you coordinate long-term care. He found out later he couldn't just do that but I did form a group now called an LTPAC or Long-Term and Post-Acute Care HIT Collaborative eight years ago and we have a summit every year.

And I have represented on a number of committees. I am on the Standards Committee. I am on the HITAC Committee here. I am a Trustee for CCHIT, always raising my hand; don't forget the SNFs, ERFs, ALFs, the LTACs, the adult care and all the other parts of long-term post-acute care.

And I have to say right at this moment very emphatically because there was something in the press saying that ONC has walked away from Long-Term Post-Acute Care is not true. In fact, Doug Fritsma is going to give me the reference to that and I am going
to write a rebuttal. I don't know if it was
the Wall Street Journal, somebody that was
really uninformed because Dr. Mostashari has
done a lot of things for us as NQF has and
really the failing is in the HITECH Act that
did not include us and consciously said they
did not include us. And as Shelly Spiro just
commented to me before, in the final rule, it
does include us and also in the phase Stage 3
of Meaningful Use, we are going to do some
volunteer meaningful use; the verb not the
noun because we don't get incentives. And we
are also going to do some certification type
of criteria that voluntarily we will adhere to
in our thing.

I work for Golden Living and I was
their CIO of Golden Living and CTO. And we
actually put in a big system because I knew at
the time in 2007 what the future was going to
be. So they are very, very up to speed on
electronic medical records and electronic
health records. If you don't know Golden
Living, we have over almost 400 facilities in long-term post-acute care, home care, hospice care, SNFs and ELFs, treating at any one moment in time over 60,000 patients. So it is a pretty big outfit.

The major objective here as you will see are three things. Medication management as we all know is extremely important. The four presenters are going to present the Kaiser presentation. There is two people on the telephone so there is actually there is three ghosts here at the table -- or two ghosts that you don't really see. Each will give 15 minutes and go through the gaps because I do come from a long-term post-acute care type environment, I know there is a lot of gaps there. So I have sort of asked people if you are going to talk about gaps that don't include the eligible hospitals and eligible professionals because the paper and report that NQF has to do pertains to Meaningful Use Stage 2. So that is the report, not futures.
And I get into this situation all the time.

But we do want to talk about gaps that might include other providers than the providers that we are reporting about today.

And so if we can, we will do 15 minutes of questions, or 45 minutes of questions after the four presentations and then do 15 minutes of gaps. And I think that is all.

I think the key thing that I always say to people that changes a lot of their minds besides knowing how many providers are in long-term care is think of person-centric aggregated electronic longitudinal care because that is really what we are aiming for in the future. Where we get trending, we can start the work on wellness and start the work on prevention and all that.

And also I think it will help all of us, I hope there is no lawyers in the room, but I think it will help us with tort laws and a lot of other things as we do quality
measures that are digital and we can actually
tell somebody that this in fact was what
happened not some emotional paper thing that
is stored off in some warehouse someplace,
which is what we have.

So I think then in patient
engagement, I am on one workgroup on patient
engagement, to get them to have some skin in
the game and we can do that better when we
show them their longitudinal record and
trending is going in the wrong direction and
give them as professional care givers what to
do to solve that problem and ask for their
cooperation.

So the first presentation is Jude.
And Jude is going to tell you he is a
physician in Tampa and he will give a little
bit more information about himself and what he
is going to present.

DR. PIERRE: Thank you, John. My
name is Jude Pierre. I am a practicing
physician in the Tampa Bay area. I work with
Access Healthcare Physicians. It is a multi-specialty group practice in the Tampa area but we also have offices and clinics in over five counties. We treat over 100,000 patients. And we do mainly managed care but we also to fee for service as well.

I also have the unique position of being the CEO of Phyaura, LLC, which is a healthcare IT company that we set up several years ago in 2004 to help really bring technology to our practices and we actually developed a certified EHR using an open source solution.

So I am going to present today some things that we have done uniquely in our EHR to help and the discussion topics are going to include medication list management, how data is inputted in our EHR by the patient, the provider, as well as the staff; the data sources that we use for medication management, which is RxNorm; and medication sampling. One of the things that we have
developed as a way to actually document in a standard codified fashion medication that we sample out of our offices. Medication reconciliation practices, how the process that we actually use are actually coded using the CPT-2 codes and also how we transfer data to an HIE partner that we have. We will also discuss the effectiveness of the solution, challenges and what we feel are the future of the systems.

So in the first slide, you can see here is this is how we enter our medications in our EHR. And if you see the checkbox that says we check here to add standardized medications, that allows us to actually query or use the RxNorm database, using either the generic name or the brand name to actually enter the medications in the chart.

So our EHR uses RxNorm database. And RxNorm is two things. It is a normalized naming system for generic and branded drugs and a tool for supporting semantic
interoperation between drug terminologies and pharmacy knowledge databases. It is managed by the National Library of Medicine.

What it enables us to do is take data sources or medications from different sources and bring it together to one and allows us to transfer this information to other systems. It contains medications for many prescriptions and over-the-counter medications and the RxNorm also includes generic and brand medications, clinical drugs, pharmaceutical products given to a patient or taken by a patient with therapeutic or diagnostic intent, as well as drug packs and the packs contain multiple medications. It does not include pharmaceutical -- radiopharmaceutical drugs, contrast media, food, dietary supplement, medical devices or other bandages. And those are really out of the scope of the RxNorm.

So here you can see the same medication list. And once a medication is
chosen, the RxNorm code is entered into the
actual problem list or the medication list
area. And here we could add the date, the
occurrence, and other attributes of that
medication.

The importance of using the RxNorm
code is really for transferring of information
to other systems, as well as a patient portal.
Our patient portal allows for better checks
and balances when reviewing medications. So
we have actually begun the discussion about
having multiple patients, multiple people
enter the medication or problem list into the
EHR. I think we have at least solved some of
those problems by allowing our patients to
actually review their medications in our
systems in a codified fashion, which allows
for improved accuracy but also patients will
be able to edit and delete medications that
they are not taking.

Here is an example of the patient
portal. We actually use a McKesson's relay
health solution and every patient has access
to a patient portal. And as you see here,
when they log into their site, they are able
to add medications. So the circled
medications here in red are the medicines that
they have added themselves to the EHR. That
information is then transferred back to our
systems and allows us to do drug-to-drug
interactions, allows us to do allergy checking
on the medicines that they are taking.

Here is just another example of
how a non-physician could enter a non-standard
medication and here we are entering a
medication or a supplement to saw palmetto.
And this is an example of how that medication
would not be transferred to the system in a
standard fashion.

One of the dilemmas that we have
had for several years, I have been practicing
for about 15 years, and this is now the first
time we are able to categorize and inventory
sample medications. There are many offices in
this country that actually accept samples from pharmaceutical industries and there is really no standard way of entering those medications in a system that allows for a drug-to-drug interaction. So this leads to many, many different compliance issues, as well as medication history tracking issues.

We are now able to track expiring medications using the inventory system. I will show you a screen shot of that. We are able to assess compliance because now if a patient goes to the pharmacy and fills their medication six months out of the year, but then the other six months they are getting samples from the office because they can't afford it or they are in the donut hole, then we are able to actually track that they have received medications from our office.

Adding sample medications in a standard format also allows us to transfer that information to the patient portal, so that the patients, they may not remember that
they got a sample of a medication but if we
add it to the patient portal, they will have
it in their history.

Also a big problem that we have
had in the past is recalled medications.
So we receive these medications from the
pharmaceutical industry. We track them in a
paper notebook but if there is a recall on the
medicine, how do we track it? It is near
impossible.

So our offices use a simple
inventory process for all samples that we
receive. We electronically inventory them and
catalogue them. And here is a screen shot of
that. So you have the name of the medication,
the NDC number, the form, the lot number, as
well as the location and the quantity that we
have on-hand. So using the RxNorm codes, we
are able to transfer that information to the
patient portal and the other systems, external
systems.

In this screen shot, you see how
we can assess that the patient is adherent to the medications by pulling the patient's name or their ID number and seeing what has been given to them from our offices.

How do we give them to the patient? Well we actually use the same prescription writer that we use in the EHR. So we have an in-house toggle and an external toggle. If it is in-house, we know that it is a sample medication and we toggle that we would like to add this medication to the problem list. Once it is added to the problem list, it is as if we are adding that medication to the same section that you saw earlier. So it allows us to actually really categorize the medication that the patient is taking in a standardized format.

This is an example of how we reconcile medications. So it kind of speaks to the same thing that I have been talking about. Here is a dashboard of medications that have been prescribed by the physician on
the right. So you have the source. The
source is physician and data feeds. The third
and fourth line of this is the data feed that
they receive from the EHR and the bottom
portion is the source of the patient. And
here we can easily check yes/no to determine
or signify whether the patient is taking the
medications or not.

You know one of the things that is
difficult and a friend of mine once told me
that physicians should have two screens; one
managing patients and seeing patients in the
office. And I didn't understand that until we
look at medication reconciliation or we look
at hospital records versus the office records.
Sometimes you actually do need two screens to
be able to really understand the nuances
between different lists.

And here is how we do it. We have
a split screen or on top is the EHR and the
bottom is the patient portal. So it allows a
better way of actually reconciling
medications.

So once the medications are reconciled, what do you do? You have to report that you have done it. There has to be a standard way of actually telling the coders that you have done it. So the integration of the EHR with the practice management, what we have on top is part of the progress note that we have and we have check boxes that signify what we have done. So if we have reviewed a medication, the coders can then, or the physician can use a drop down menu to report the CPT-2 codes. Once that is reported, then that goes over to the billing systems and automatically gets transferred to the payers.

What we do also is -- what we can do also is transfer the same medication lists via CCDs. And this next example is an example of how we have transferred a CCD of the medication lists or the problem lists that we have to a SyntraNet, which is an HIE system used by Suncoast RHIO, a partner. And here
the same patient that we have been looking at
and their medications here in this external
system.

So again, in order for us to be
able to transfer this information to an
external system like this, you have to use a
codified medication list. So that is the
importance of using that.

So effectiveness of the solution.
The use of the patient portal interfaced with
the EHR allows for real-time medication
reconciliation. The split screens allow for
easy review. The use of RxNorm codes assures
the vendors that different vendor systems will
talk to each other. And using a sample
medication inventory allows electronic
tracking of medication for compliance.

What are the challenges that we
are facing? Well one of the biggest
challenges, and we have spoken about that in
the first session, is the patient getting the
medication entered in the system. If they are
not in the system, really it is not going to
be an accurate medication list.

Involving patients in the patient
portal can be difficult. I see a lot of
geriatric patients and some of them don't have
computers. So that is really not going to
help in that process.

Multiple screens could be
confusing to physicians. Most physicians or
a lot of physicians don't use electronic
health records, especially the older
physicians and if you throw in two screens at
them, they may get confused.

Training is critical. I think one
of the biggest problems that we have is in any
EHR implementation is training the staff and
dealing with the turnover of that staff.
There is a lot of turnover in medical offices.

But I feel the ideal system of the
future is a system that will enable physicians
to proactively know what they need to do
better patient care. So if a medication
reconciliation hasn't been performed in six months, we should be able to get a text or an email alert. Systems right now, if you ePrescribe a medication or you dispense a medication to a patient, there is no way to actually know that the patient actually received that medication from the pharmacy. And that is something that we have talked to our vendor, our ePrescribing vendor about.

How do we get a system that when a patient gets a prescription sent to the pharmacy that they have picked it up? So that is something that I think can be easily done by possibly adding a toggle in the ePrescribing systems that we can then run a report to see what the compliance is.

It is also imperative that to improve the patient care and the effectiveness of prior practices that we teach medical professionals early on in their care instruction on choosing the right health system and also teaching young professionals
the importance of the measures that we are tracking because a lot of times new physicians will come out and they want to take care of patients but they are really not taught that and their focus when they come out is really try to learn the clinical aspects but really we need to start teaching the physicians early on in their career the importance of the systems that they choose, as well as quality measures.

So in summary, Meaningful Use standards encourage better data entry, reporting and exchange of information. RxNorm codes, SNOMED codes, CPT-2 codes are all important and need to be taught to everyone in the health systems.

Physicians and their staff are key players when it comes to recording and reviewing of medications. Future systems should track and alert various aspects of medication dispense and usage. So I think these are all important things and hopefully
we can spark discussion on different aspects
of medication management.

Thank you.

DR. DERR: Thanks, Jude. The next
panelist is Ted.

DR. PALEN: Hi, my name is Ted
Palen. I am a physician internist with the
Colorado Permanente Medical Group in Colorado,
in the Denver area.

As was alluded to earlier, we have
some ethereal voices that will join us soon
from cyberspace, I guess. Dr. Khodor is a
hospitalist in the Denver metro area and Dr.
McGinnis is a clinical pharmacy specialist
concentrating on medication management issues
and patient safety issues. And they are going
to join in just a second.

As I introduce this, the overall
topic here of course that we are talking about
this morning is how to identify best practices
in doing medication management. Make
recommendations of how others could maybe
adopt some of these best practice and then of
course identify gaps.

Medication management objectives

are very broad. I mean this could span, as
Pierre alluded to, there is reconciliation.
There is adherence. There is drug/drug
interaction, drug/allergy interactions. We
can't cover all of that this morning.

And Dr. Khodor is going to talk
about one area of trying to understand how to
do medication management with keeping the
medication list active and eliminating
duplicate medications in the medication list.
So he is going to focus on that one area. And
Brandy is going to talk a little bit about med
adherence and some of the things she has done
with that.

So Samer, are you ready to go?

DR. KHODOR: Yes, I am. Good
morning.

DR. PALEN: Samer, I got the
control stick here for the slides.
DR. KHODOR: Okay.

DR. PALEN: So just tell me when you need to go to the next slide.

DR. KHODOR: Okay, great. Let's go to the next one. I will address a lot of these objectives as we go. For the sake of time, it is probably better to go on.

So our main focus here is that or the goal is maintaining an accurate list of medications in the electronic medical record. And that is a key feature because we don't want it in somebody's progress notes or some people even add it to the list, the problem list. They don't want address it where it should be, which is in the actual medication tab of the EMR, where it is useful for the next provider. So that is our goal. It sounds simple but we will talk about some of the problems. So the next slide.

Okay, so this is, as you guys are probably aware, there is a lot of studies about how costly this is. Medication errors
cost our society a lot of money and a lot of
basically you know bad things happen to
patients when we make errors. A lot of these
are preventable. That is the key.

This is from the Institute of
Medicine in 2006, listing some of the errors
and how much it costs in terms of extra
hospital days per incident. And remember of
these will not include med errors or near
misses that happen in the outpatient settings
that are probably not reporting.

We know that reducing hospital
readmissions can happen in two major ways.
One is closer posts-discharge follow-up. The
other is medication reconciliation. And at
Kaiser Permanente we found that we could
reduce readmission by up to 16 percent so far
by improving the medication reconciliation at
the time of discharge. And these are similar
to other studies that have found anywhere
between 15 to 25 percent in reduction of
readmissions just by doing good medication
reconciliation. Next slide please.

So why is it important? Again, medication list accuracy directly impacts patient safety and quality. You have fewer errors. You have better transitions of care. This is between providers from the hospital to SNF or between one provider to another when you are covering for your partner. And again, we recognize that it is an important cause of hospital readmission. Next slide, please.

So in our process we really focused on the outpatient study. The reason is these are the providers that know their patient the best. So as a hospitalist, I see these patients when they are sick and at a time of crisis and I know this patient the least, probably. And so it is really the time we end up doing a reactive process, which is medication reconciliation and then ongoing medication management, so to speak, when they see their providers who know them and know which medications they want them to be on.
Most everybody agrees that medication management should occur when a patient sees a provider, especially in a primary care setting but it is not happening consistently. So we focused on outpatient settings during an office visit and what we started with really is just providers, just the physicians. We can add pharmacy and nursing and other people for med rec at a later time but we are really focusing on just physicians. Next slide please.

So we have utilized data from day one and we gathered baseline metrics to see what it looked like, you know, what were the problems we were having with our list. How accurate are they? How much of the data can we capture to capture the errors?

So in our use of HealthConnect or Epic, these are the things that we can gather. So one is we can see each provider each month and see how often they used, reordered medication. The other is discontinued. What
percentage or how often do they discontinue medication?

Lastly is clicking meds reviewed. Medications reviewed puts the name, date, timestamp that I looked at the med list and kind of confirms to the next person that this has been reviewed.

These three things really support good medication management. If you are reordering a medication, basically that is replacing a medication so it automatically stops the old one and starts the new one or if you discontinue a medication, that tells you a couple of things. One is that they are going into the medication activity part of the chart, which in HealthConnect that is really the only place you can make changes to the medication list. You could order meds and see the meds from different areas but this is the only place where you could reorder or discontinue. And so the other is saying if you are doing some of these activities, again,
it is important to get medication management.

The other thing we do is look at the actual medication list itself for each provider. You know, how accurate are these med lists? So what if you go and reorder or discontinue, what if your medication list still looks messy?

We looked at duplicate medications because of all the errors that could exist in medications, which include omissions or wrong doses or titratable sigs, et cetera, et cetera. Duplicates is by far the most common, and really the only one that we could easily capture without interviewing the provider, and the patient, and the families, and so forth. Just by doing chart review we can get these metrics pretty easily.

The good news is once you teach people to reconcile their meds and eliminate or reduce duplicates, they usually will capture some of the other errors that I have alluded to.
And so just I will point out one thing, some duplicates are okay. For instance like albuterol inhaler, albuterol nebulizer. You know, some of those things are going to look like duplicates but they don't count technically as duplicates. So we have a list of some meds that we allow. The next slide.

This is just to show you what some of the data we can gather looks like. Next slide, Ted.

I'm not sure if you can -- okay, there we go. So we can sort it by location, whatever medical office, by department, by provider. And this is what we look like. So it takes provider A this number of office visits in a month. What is the percent of duplicates that they have? Back one -- we are still on the other one. And I am just showing you how detailed we can get our data, basically, narrowed down so that we could see how often they reorder, how often they discontinue, et cetera.
And the last one shows average duplicates per hundred office visits. So that is kind of one of the ways we are comparing providers now. It turns out to be a pretty good metric. They see about a hundred patients in a normal workweek. And so you could see what is the average duplicate medications that occur on their list per that week. And that really looks at an overall rate of how well they are doing in medication management rather than looking at it patient by patient. So we like that metric the best.

Next slide.

This is comparing our -- we took a group of pilot physicians that we are working with and we compared it to the rest of the region. The pilot group was a group of physicians from two different offices. We asked to, you know, we were going to track their data and get their input on the processes so that we can create a good process. And we compared how often they go
into medications activity. Again, that is really the only place you could truly do med rec, like discontinue or reorder and that sort of activity. And while most providers and patients, by the way, agree that these meds should be reconciled during an office visit, we see here that even with our pilots, it is 66 percent that go into medications activity and non-pilot physicians just standard in our region, 43 percent. So that is a big discrepancy.

The other is 66 percent is good but we still expect it to be higher than that, during especially a primary care office visit. We think that med management would be one of the major activities that would take place. Next slide.

This is clicking the medications reviewed button. And again, this is an activity that we think would be helpful but it is not uniform. So even the pilot physicians were only clicking it 42 percent and the non-
pilot physicians basically never click it.

Next slide.

In our objectives, we mentioned the importance of adding medication management on a quality dashboard. What we want is to put medication management as a parameter for our operational leaders to see it on a regular basis, just like they see hypertension control, diabetes control and other quality metrics that we track for our patients to make sure that we are doing a good job in terms of their overall healthcare. So we think that we have the data that supports good med rec. We have a lot of infrastructure that I couldn't mention because of time but we created a process. We created a standardized of teaching it by an electronic web-based tool for each provider that only takes 15 minutes. So we have done all these things and we have gathered enough metrics that we think that our operational leaders could really do a good job with tracking it and to help make sure that
this is a sustainable process. This is an example of what that might look like. So this tracks average duplicates per 100 encounters and you could do this by the region, you could do it by department. You could do it by providers. And so each leader can look at these graphs accordingly. Next slide please.

This is just another way to look at duplicate meds and this is the percent of offices. It is with one or more duplicates. Because this is more complicated and there is a lot of things that could happen in the outpatient list, we just have two different ways to basically look at the duplicates. And we focused on duplicates again because that is where the errors usually happen. And rather than following provider workflows, we thought this was where the money is, in terms of this is the final product. What did the list look like? And that is what we hoped to incentivize in the future and add it to performance metrics. Next slide.
Okay, so we really have a role for just about everyone in terms of collaboration on this. We have our operational leaders. We have everybody engaged. We have physicians, mid-levels, pharmacy, nursing. We are working with nursing to identify roles for nursing like RN, LPN, MA. How could we make this more of a teamwork to make the provider successful? We know ultimately the provider has to be the one that goes in and adjusts the med list accordingly but there is a lot of things that we could do and involve patients and their families to get that so that by the time the provider sees them, they could cut the time a little bit so they could focus on all these things that the patient is there to see them for. Next slide.

DR. PALEN: I think I was going to talk a little bit about this and this is really the data standards that are needed if we are going to do accurate med reconciliation. And Pierre talked a little
bit about the RxNorm but there is other code
standards and how do we get systems to speak
the same codes, so to speak? And then the
status of medications. All of these should
have date and time stamps and audit trails for
when something is ordered, when it is
reordered, when it is sold, when it is
discontinued. And even associating a
diagnosis of why the medication was used, how
do we link that together?

Another big issue where there is
gaps is sigs are usually free text. And if we
are going to really do good med reconciliation
to know how to manage this, we have got to
have an understanding of how to manage sigs.
Medication review function is not always very
straightforward. As you could see the non-
pilot only had one percent of doing this
because it is not a linked function,
necessarily, with the normal workflow. And
then interoperable barriers because of
standards.
And I am going to skip over this real quick because we have only got a couple minutes left, is I want to get to Brandy and let her talk for a minute or two about medication adherence. So Brandy, do you want to talk a little bit? We have about a minute and a half left. So take it away.

DR. MC GINNIS: All right. So definitely not to be all-inclusive with this topic because it is a pretty huge topic to begin to address, but simply to show an example of collaboration when it comes to medication management issues.

So medication adherence, why is it important? Obviously we know some of these statistics but it is estimated that only about 50 percent of patients continue their medications at one year. And the unfortunate part about this statistic is it hasn't changed over several decades. So we know that we, as providers, are not doing what we need to do to address medication adherence. We know there
is poor outcomes and a huge cost burden to our healthcare system. Thankfully, we have some quality measures that are on the table and some more in the pipeline that are beginning to set the platform for healthcare organizations to, if you will, have to address medication adherence.

So some gaps. Probably one of the biggest ones, again this is not meant to be all-inclusive, but the lack of adherence data in our electronic medical records. I don't think Kaiser is alone in this. I think probably most EMRs do not contain this type of data. So although EMRs may have viewable refill history such as ours, because we are linked with our pharmacy system, in order to determine if a patient is adherent, that takes time and takes a trained eye to be able to view that. And let's be frank, that is just not possible for providers to do on a quick basis when they have 20 minutes with a patient.
So ideally, we need adherence ratios, are days' supply remaining readily viewable so that a provider can glance at the medication and be able to have that conversation.

Probably one of the other biggest gaps is external Rxs. I'm not sure that we have a great answer for this but definitely an issue in most healthcare settings. So those patients that jump from pharmacy to pharmacy, how do we begin to track that for our quality measures?

And then of course, where it all begins is accurate medication lists. How do we begin to have a conversation about adherence, if we don't even know what our patients are supposed to be on? Next slide.

So just some key initiatives that we are doing here at Kaiser Colorado via collaboration with some of our other regions. We are integrating adherence data or beginning to be able to integrate adherence data into
our electronic medical record. This will allow us to have some point of service activities, as well as population management activities such as IVR refill reminders. We also have a big push to educate both providers and patients on the importance of adherence and, most importantly again, collaboration with our medication reconciliation initiatives and medication safety initiatives, which is probably one of the most important things we can do in our healthcare systems is have that collaboration.

All right, Ted, back to you.

DR. PALEN: Yes, so both Brandy and Samer are going to stay on the line through this session. So when we get to question and answer period, they are available to, of course myself, too, to answer your questions or comments regarding this.

(Appause.)

MR. MEHTA: Okay thanks, John.

And I would just like to thank NQF and John as
well on behalf of ASHP and being brought to the table on this discussion. I think it is very, very important and I just appreciate the fact that I get to work with such accomplished individuals.

So first I will talk a little bit about my background and myself and then the society, the American Society of Health-System Pharmacists and then I will go into a couple of best use cases, which are probably the most fun to talk about.

So a little bit about myself. I actually did things backwards. Originally I was preliminarily trained as a statistician and biostatistician and then I went to pharmacy school afterwards. And then I went to pharmacy school afterwards. And then I decided to do more clinical training and I pursued a PGY1 residency that is accredited by the American Society of Health-Systems Pharmacists.

And I practiced for about two
years as a clinical pharmacist in different health systems before I was brought on to ASHP.

So ASHP or the American Society of Health-Systems Pharmacists is a, we are about 40,000 members and we really advocate for the safe use of medication and the safe use of medication process in health systems and hospitals. So really focused on patient safety and that safe medication use process.

We advocate on behalf of our members and most recently and notably we partnered with other associations, including ASCO and ASA on legislation that was incorporated into the FDA's Safety and Innovations Act that created an early warning system for the crisis of drug shortages. So I know that is a little outside of scope, but it is important to consider depending on the medication use process and even having the right drugs to administer to patients. If we don't have them, we can't really take care of
them in the health system.

So in terms of the best use case scenarios and this was a pretty fun activity because we had just finished our policy week where our council members and commission members came in for a week just to talk about different agenda items for our members. So I got to talk to a lot of different individuals and ask them about their challenges with respect to medication management and quality measures in their health systems.

And one in particular came from a hospital in Oregon, which was pretty advanced. It is a level one trauma center, about 5050 inpatient beds. They had a 24-hour inpatient pharmacy service, which included and consisted of a decentralized pharmacists' model, so they had pharmacists rounding with healthcare teams in the medical and ICU units. And in this health system, they also implemented barcode administration and they also had CPOE in the medical units and pediatric units.
So they are pretty up to date, pretty advanced in terms of what they were doing. And this allowed them to do several different things in terms of preventative strategies and preventative medicine.

So I know I have some slides just describing some major themes and issues surrounding medication management but as John had hinted to earlier, I would like to go through some of the more best use scenarios.

So in this health system, as I was mentioning before, they had barcode administration and they would also add CPOEs. So it gave the pharmacist an opportunity to conduct more preventative strategies. And one of the major components of that is actually creating their own custom library that was outside the electronic medical record that was easier for them to facilitate in terms of communicating amongst themselves for patient care and patient medication management. So instead of writing to the EMR with the
incorporation of barcode administration, they had information on what times those medications were administered.

But that communication piece is a really important gap to consider because if all the clinicians involved in that patient's care don't have an idea of when medications were administered, it was creating problems in terms of overuse and appropriate use for medications. So some patients might have had influenza vaccinations that were doubly administered.

So at this one particular hospital, as I sort of mentioned to you and alluded to before, they created their own library outside of the medication management system and this allowed them to create a patient acuity score or a patient complexity score that contributed to ascertaining which patients in the medical units and ICU units were high priority in terms of monitoring their medication management or medication
therapy. So they would require information such as drug therapy monitoring, laboratory monitoring which included ventolin levels, warfarin monitoring. As we discussed earlier this morning, 50 percent of adverse drug events are preventable and are related to medication management can be attributed in geriatric populations to simple things such as I and R monitoring for warfarin.

And the results of the study, while I don't have them on any of the slides here because they were continuously assessing this type of model and that discrepancy of timing of writing to the medical record and the communication piece, they are really just assessing internally within their division, whether it would facilitate help for those clinical pharmacists and whether it would reduce their workload.

The other use case scenario that I wanted to touch on a little bit from a personal experience was during my residency
program where we were doing more antibiotic stewardship monitoring and appropriate use monitoring. And in this certain situation we had a clinical decision support system that aggregated information from the laboratory and also from pharmacy in terms of which medications were dispensed and specifically antibiotics. And in that use case scenario, we would continuously provide notes to other clinicians who were involved with the patient care team. But again, that timing and that gap and whether or not the antibiotic was administered was a real issue in determining vancomycin levels and whether the therapy was appropriate and whether it was discontinued on time.

So as an overarching theme, I think that sort of area of timing in administration was probably one of the most important gaps to consider in terms of medication management just because of the medication therapy monitoring systems within...
health systems and how important pharmacists are involved with that process to contribute to the communication between team members and inpatient care.

I think that is it. I can hand it over to Heather.

(Applause.)

DR. SOBKHO: Is the volume okay?

Are you sure?

Thanks everyone. It is a real pleasure to be here. I want to especially thank Rosemary Kennedy for all her great work at NQF. And she is my idol so I just thought I would share that with you all.

I'm Heather Sobko. I am nurse informatician from the University of Alabama at Birmingham. I am also the President and CEO of IVR Care Transition Systems and I own a robotics company. So we are doing lots and lots of interesting electronic things to reach out to patients and try to improve the way we deliver healthcare across the board.
Today, I want to talk a little bit about IVR Care Transition Systems and let you know about a strategy that we implemented to try to address medication issues after the patient leaves our hospital setting. So we are doing a much better job with patient safety and medication reconciliation in the inpatient setting. But the moment they leave our doors, there is this big gap. What happens with the patient? Often patients are discharged from the hospital and they have pending tests. They are waiting for results on tests and medications can change within hours after they leave the hospital. And now we are back to square one. We don't have an updated appropriate medication list.

So I am going to just briefly touch on some of the challenges associated with care transitions, talk a little bit about IVR or interactive voice response technology in the medication management process using IVR technology to support that process and how it
can be used for a data capture and analysis
and what that means in future implications.

So we know that care transitions
are an extremely vulnerable time for patients.
We just don't have enough time to do
appropriate education and clarification,
particularly for medications. It is an
information overload. In the matter of an
hour, we are telling patients you need to
follow-up with your specialist. We want you
to see your primary care physician and here is
a list of your medications and stop these
meds, and start these meds, and continue your
home meds as well, except for the ones that we
have put on this list. And then here is your
diet and here is your exercise. See you
later.

And the patient is not feeling 100
percent yet but they really do want to go
home. So they are yes, yes. They are going
to sign everything and they are going to walk
right out the door and they don't realize that
they have questions particularly with complex medication regimes until a couple days after they get home. And they have this massive amount of information. They have all these papers. They pull out all their meds. They do not know for themselves the difference between name brand and generic meds and that dosages can be different.

So they have problems and they look at the paperwork and they say hmm, my real doctor probably doesn't even know I was in the hospital. I will just go back to this emergency department and they will help me. And of course bundled payment rules are going to change that strategy very, very quickly. So there is a huge need to provide some type of extended support for situations just like this.

And interactive voice response technology is a very low tech technology. You use a telephone. It doesn't require special knowledge. It doesn't require special tools.
And most individuals may not have access to an internet or a computer but they do have a telephone. And so we chose something really, really simple that levels the playing field and is available pervasively. It is ubiquitous. It is a telephone.

It overcomes some of the challenges associated with health literacy. You don't have to be able to read to be able to have a conversation with someone or push a button on your telephone. It is very cost effective. It does not require a lot of extra infrastructure and it is not expensive for patients. It is real simple to use. It can be very standardized and it is scalable. You can grow a system using a phone, such as interactive voice response to include just about anything you might like to know.

We developed IVR Care Transition Systems using an interactive voice response platform. It is very patient-centered. Patients get to choose what time they would
like you to call and check on them. Patients enter data using their telephone key pad. That information is fed through a secure network to a dashboard that is reviewed by a clinician. It triages for the clinician so that follow-up can be provided to patients who need follow-up because they are telling you they need follow-up but you are monitoring all your patients and the system is capturing data for you. So it is helping you become more efficient and helping streamline the workflow processes.

The benefits are it has the built-in triage system. It is very cost-effective. You can run trending reports and learn what is going on with your patients. It is a very appropriate resource allocation. It fits into the existing workflow and it is a plug and play stand-alone system.

So for medication management support, we devised a series of questions that are automatically administered in a survey
fashion to patients after they leave the
hospital and we ask them about their
prescription and over-the-counter medicines,
about side effects they may be experiencing
and issues that could be associated with being
able to follow their medicate regime. But the
way we ask the question is very meaningful.
We don't often have conversations with
patients in the hospital about their ability
to afford medicines.

But an easy way to not put
patients on the defensive and to actually have
them giving you very important truthful
information is to say gee, since we last
spoke, have there been times when you missed
your medicines? Sure, I missed my meds. And
then why might that be? Maybe it's because I
just forgot. Maybe we need to give a little
bit of coaching as far as keeping your
medication on a structured schedule helping
you overcome those challenges. Maybe I am on
a home medication delivery system and my meds
don't arrive for two weeks and I don't know what to do about that. Maybe they are just too expensive, the side effects make me feel bad, or I had to make the choice of pay the power bill and buy some groceries or buy this expensive med which is not being covered by my insurance policy any longer.

So there are lots of meaningful questions that we are gathering information about what happens to the patient after the fact. It does provide an opportunity to do a medication review and we use a strategy so information coming into the dashboard nurse or care manager looks at the information and sees that a patient has problems with their medicines, provides a personal phone call. And going through the medicines and comparing a list is not sufficient. We actually have the patients put their medicine bottles on one side and as we go through information together, they move the medicine over to the other side. And what we are learning is that
there are a lot of times, going back to the redundancy issue, there a lot of times when we have medicines listed on our list that the patient is not in the possession of and sometimes the patient has five or six medicine bottles and we don't have any idea that they are on these meds. And come to find out, these are three or four years old but the patient said oh, they are in my medicine cabinet. I'm supposed to take these medicines. So that has been helping us solve problems.

Very briefly, this is what the dashboard looks like. It is an overview. Red flag means patient has triggered they have a problem. Yellow is a warning flag, maybe the patient needs education. Green, everything is fine. Blue, patient doesn't know an answer to something. And the absent sign of information simply means that for whatever reason there was no data entered into that field.

A close-up look, you can look at
what has happened for Thomas Smith trending over time. And a built-in documentation system for clinicians to say what they did in response to these issues.

And what we have learned in a pilot study of 540 patients that were randomized to usual care or 28 surveys getting them through that 30-day discharge process before readmission time, we had an 86 percent response rate that patients actually completed all 28 surveys. Very, very unusual. Why? Well we let the patients choose what time they would like to be called. The computer doesn't really care what time it is calling you. It could be 5:00 in the morning, it could be 10:00 at night. It is not a rescue system. It is a coaching system. We are taking information and we are looking at it within a 24-hour period and then responding to patients who tell us they want our help and need some help. So that was a helper.

We don't use a computerized voice.
We used a person, a real person made the recording. So it is not a robotic sounding voice. It was me. And patients don't like to hang up on a person. They will hang up on a computer but when you have a real person's voice, they don't want to hang up.

So we kept the survey time to less than four minutes per survey and we learned that patients don't often know why they are taking their medicines. So when you ask them are your medicines helping you, they don't know. Well I take it but I don't know if I am really benefitting from it. And so if we don't have that value built-in that it is meaningful for the patient, what is the incentive for them to take it? And a perfect example would be for a statin medication, for example, a patient doesn't feel better or worse and they don't know until they have their labs whether they are doing a good job with controlling their cholesterol. But pain medication on the other hand, if you don't
take your pain medication, boy you feel it immediately. So there is a whole different incentive for the type of medicine that you are taking as to how well you are going to engage in self-management.

We are tethering this information that we are learning into the electronic medical record. We are tethering it to the last patient encounter so that physicians and all providers logging into the system can see what is happening and can weigh in on the strategies for reconciling the medicines.

What is really, really interesting is that we reduced preventable re-hospitalizations by 25 percent and emergency department visits by 22 percent as a result of dealing with medications only. So there are other reasons that patients come back to the hospital; lack of follow-up care, signs and symptoms, exacerbation of an underlying complex problem.

But by addressing this in a way
that the patients actually liked, we started asking different kinds of questions. So now we are going back and looking at our discharge process to understand do we need to find out what is going on? Can the patient afford these medicines? Well, sometimes they don't know until they present to the emergency department without the meds that we discover how expensive they are or they go to the pharmacy and they learn that it is not covered under their insurance policy and so they just never fill the prescription.

So we are learning a lot about these processes. I think it is very telling that patients are agreeable to use a phone system that is an automated recorded phone system and they did not find it overly burdensome. And I am really honored to be able to share with you that an 86 percent response rate for 28 surveys, that is a lot of data coming in.

We did give the patients a choice
for the first seven days after the hospital, all patients get called daily. At the end of that time, we give the patient an option in the automated process, would they like to continue getting a daily call or would they prefer a call every third day. Forty percent chose to stay with the daily call and 60 percent chose to switch to every third day. What would be interesting and we haven't evaluated the data yet is to see are there differences in more intensive short-term intervention 28 days in a row versus seven days and then every third day they are getting extended past the 30-day intervention. Is there a benefit to one strategy or the other? And I am happy to entertain questions and again, I want to thank you for the opportunity to share a little bit of information about IVR Care Transition Systems. (Applause.)

DR. DERR: Now we are in the question and answer type session and we get
questions from the telephone and also for you out there in the audience. And so I will try and switch. I have got a couple questions off the internet.

Shelly?

MS. SPIRO: Sure, Shelly Spiro with the Pharmacy HIT Collaborative. And that was really great.

One of the thing, the Collaborative was formed in September 2010 by nine of the pharmacy professional associations really to address some of the pharmacists' involvement in the national HIT infrastructure and making sure that some of the things that you are saying, Heather, in the inpatient setting can we really address. And so we went back and looked at the standards and worked with the standards development organizations, both NCPDP and HL7.

And one of the things most of our pharmacists do medication therapy management in the ambulatory setting and one of the areas
for our patients who are in the Medicare Part D program, effective January 1, 2013, those who are providing an annual comprehensive medication review which is one of the requirements of the Part D program, we have to actually hand the patient a takeaway document. And this takeaway document has an active med list, has allergies, and has easy readable and understandable language for instructions.

And so we have taken this and actually have gone through the standards development process and created a consolidated CDA. It is in ballot now and is available. It is an implementation guide that can be used and actually used in all of the settings for those who actually have adopted the Meaningful Use of the electronic health record will actually be able to use this and we are asking people to begin to start to use it.

But the interesting thing that we really worked on because we worked with CMS on this also was to make sure that it was in a
way that the patient could either print it or
it can be exchanged with an electronic -- with
their personal heath record. And the
instructions, it is all codified within RxNorm
and SNOMED also, but we added into there a
place where a medication list was reconciled
by a pharmacists, which will really help us,
hopefully, get to a medication reconciliation
issue in these points of transitions of care.

So I applaud the work that you are
doing on the IVR and I think it is a very
important way to bring information to the
patient. But again we are working from the
association standpoint, including ASHP as one
of our members or the collaborative in making
sure that we handle these transition of care
issues with our patients and especially in
reducing the 30-day readmission and especially
in keeping our patients active.

I was at the ONC meeting last week
that dealt with patient engagement. And
patient engagement is an area that pharmacists
play a very important role in and we have a
lot that we can do in that area. And that was
one thing, of all of the speakers who were at
this meeting had said they all had problems
with medication. There wasn't one person on
the panel list of patient advocates who said
they need information about their medications.
And it needs to be gathered from several
different locations, whether that is from the
pharmacies -- and it isn't just prescription
information. It is over-the-counter
information that is why I really applaud what
you are doing from an IVR standpoint because
that is the piece that we as pharmacists are
able to get from that patient and we need to
do a better job of finding out what
medications those patients are actually
taking.

DR. DERR: Thank you, Shelly. Do
you want to respond or anybody want to --

DR. SOBKO: I really appreciate
the vote of confidence.
What is interesting at UAB is we have a lot of rural communities. So all of our major cities line up right down the middle of the state. For some of the patients that come, you know UAB is 1,046 bed hospital, we have specialty and primary care, patients come from hundreds of miles to our hospital. Once they leave, they leave they are traveling great distances away and they may be visiting other emergency departments, for example, that this is giving us an opportunity to reach out and actually follow-up a little bit more with them, just because we are learning they need us. They are not sick enough to stay in the hospital but we can't follow them home. It is absolutely preposterous to think that we can do home visits at 300 miles away. So we picked a very inexpensive strategy.

We have 54 of the 68 counties in our state we see patients from those that have been enrolled in this program and six surrounding states. So it is Alabama,
Georgia, Mississippi, Louisiana, Florida and Tennessee.

DR. DERR: So do you have -- you keep using the word "we." Is this the case management within the hospital or --

DR. SOBK: It is.

DR. DERR: -- the hospitalist?

DR. SOBK: It is the care management department and they work directly with the hospitalist department.

DR. DERR: Okay. Just I am going to take one from the phone. This is from Chris Tonozzi.

An issue important issue for medication reconciliation is that ePrescribing systems need to communication from provider to pharmacy. This is for Jude. And I thought that was ePrescribing was.

DR. PIERRE: Yes, that is what ePrescribing does and that -- unless the question may have been the reverse and that is what I kind of alluded to is the gap in
determining whether or not the pharmacy has
dispensed medication is a big problem because
right now we don't know. We can send the
medication to the pharmacy but we don't know
if they are taking it.

DR. DERR: And also ePrescribing
in long-term, we are exempt from ePrescribing.
So positions sometimes have to have maybe two
systems. And of course, as you said, two
screens is a problem. Having two different
ePrescribing systems is going to be a very big
problem.

Yes, sir?

DR. ROBERTS: Yes, hi. I am
Darryl Roberts with the American Nurses
Association.

Some of the issues with medication
reconciliation have been, we have been working
on these as a group of professionals really
heartily since MMA 2003 started Medicare Part
D and started looking at MTM, medication
therapy management programs to keep track of
the chronically ill.

The one thing that the Pharmacy Quality Alliance has tried to work through over the years has been proportion of days covered, the proportion of days that you should have on-hand medication on-hand, versus the medications you actually have on-hand.

One of the things Heather addressed was that patients frequently have old drugs in their drug cabinets that probably shouldn't be used. One of the other issues insurance companies are dealing with payers has been that patients go in, they take their little prescription to the Walmart and they get the $4 prescription. The pharmacy gets paid but the insurance company is not involved. There is no feedback looped back to the pharmacy, I mean back to the provider. There is really no feedback loop anywhere in the system that works effectively.

And it seems that the tools that we are providing to the patients, to the
physicians, the nurse practitioners that are prescribing and to the pharmacies are pretty much ineffective. But it does seem that ultimately that the repository for this information ought to be with the insurance company that is paying or with whoever else is paying, if it is the drug company, having some kind of alignment among these organizations that are ultimately paying should be the answer to figuring out who has got what drug and ensuring that that feedback loop goes back to the prescriber that says, okay we at Walmart gave this $4 prescription to this patient. You prescribed it. Here it is. We at Kaiser paid for a $76 prescription for this and here it is.

The thing that seems like we won't be able to get into the loop appropriately probably is over-the-counter drugs. And even in that case, we have over-the-counter Rx. We have prescriptions that are being served over-the-counter. Patients that are taking
Prilosec instead of the prescription brand that I absolutely can't think of the name of the more expensive prescription. What is it?

DR. SOBKO: Nexium.

DR. ROBERTS: Nexium, right. So they are being prescribed this expensive drug Nexium and instead they are taking Prilosec over-the-counter because you can get 42 of them for $20 or you can get 30 Nexium for $320 or whatever that costs.

But these types of feedbacks, with the exception of the over-the-counters ought to be something that we are building in as quality measures for the pharmacy and as quality measures for the prescriber. And if those two don't link, that is the quality issue.

DR. SOBKO: So there is another issues that sometimes the payer is not always involved. Sometimes people pay cash.

DR. ROBERTS: There is a pharmacist filling it.
DR. SOBKO: True.

DR. ROBERTS: So the feedback from the pharmacist to the provider that says okay, you wrote it, I filled it. Have a nice day. Or the insurer saying you wrote it, I paid for it. Have a nice day. And these get entered into the electronic health record in a way that we can actually manage and track whether you are getting an alpha blocker from Dr. Joe and a beta blocker from the nurse practitioner. And you are seeing the nurse practitioner as your primary care provider and you are seeing Dr. Joe because he is your cardiologist. And there is no reason to tell the nurse practitioner because the cardiologist communicates with the nurse practitioner. Right?

(Laughter.)

DR. PIERRE: I think Florida has addressed that in the narcotic and controlled substance arena. There is a drug database now that every physician in the State of Florida
can log into, whether or not you filled a
narcotic prescription in cash or if it was
paid by the payers.

I don't know what was involved in
getting that database up and running and who
is managing it but that is something that can
be done because we know it is being done with
the narcotic medications and it really doesn't
matter what insurance they have. It is just
whether or not they have received the
medication and who prescribed it.

DR. PALEN: But it is a classic
example because Colorado has a prescription
drug database too but again, it is just
controlled substances and again, it is not
interfaced to my EMR. So it is a separate
system I have to log into. How often am I
going to do that?

And so until we have that
integration of these products from pharmacy to
could be an inpatient pharmacy, outpatient
pharmacy, can be in Kaiser we have our own
pharmacies but I guess we have many percent of
our patients still going to external
pharmacies to fill things. There is the issue
of self-pay. And again, until we get a
unified approach on this and getting them
talking to teach other, there is a problem
with this reconciliation and adherence.

I mean ideally you could have days
supplied, how many were dispensed, and have
that running in the background to say oh, it's
flagged, it is time. You haven't filled. Why
aren't you filling this? But you have to have
the integration first.

DR. ROBERTS: And it seems to me
that this would be the forum that would start
that integration. If that is the best
practice and we know it works and we have
established that it works somehow, these are
the people that need to get it working
elsewhere.

DR. DERR: Yes. From the
telephone, in present EHRs to this person's
knowledge, when a medication is stopped, this
is not transmitted, only when a new medication
is started. And again, is there is a message
transmitted?

Again, this is a feedback loop.

There is a lot of the things I sat at the
Standards Committee on Wednesday. I listened
to everything that is in Stage 2 of Meaningful
Use and everything was a push out of
information. So I asked was there anything in
the Meaningful Use or planned in the
Meaningful Use for receiving information.

Because we, a lot of people in skilled
nursing, we have electronics. We send back.
You can't receive it.

So there is a big gap in that and
they said well, they are looking at that
because that is trying to close the loop and
the Policy Committee is looking at receiving.
Otherwise, the hospitals and doctors shovel
out this information and if we don't talk
about receiving and interconnectivity and
interoperability, it is all going to some
abyss someplace and never be used.

Okay, from the microphone.

DR. NERELLA: Ravi Nerella. I'm a
physician informaticists from Mercy and a
hospitalist also.

So I have got a first question to
the Kaiser group. I applaud that you guys are
looking at med rec in the ambulatory setting
because I think that is definitely a large
proportion where that should be done and not
just on the inpatient side. But I guess for
the duplicate stuff one of the things that I
have seen personally when a patient comes in,
one of the most common duplicate medications
that I see is narcotics. And when I kind of
look up the audit trail, there is numerous
refills, essentially, but they are not refills
they are just new prescriptions put in. And
when I look at what they has been done either
the nurse or whoever entered the order from
the clinic was presented a duplicate alert yet
it was overwritten basically most of the times
being professional judgment. And it is
usually for a short-term thing.

And so I think my question I guess
to the Kaiser group is have you guys looked at
that, tried to address it and say why are you
guys not refilling this medication instead of
just reordering a new prescription and what
kind of feedback are you guys providing to the
physicians or the user who may have done that
repeatedly or in that clinic if it is one
clinic.

And then I have got another
question for Heather.

DR. PALEN: I'll start and I will
have Samer discuss it, too.

Some of it is training on how to
use the system. I mean if there is one way to
reorder a medicine without having it become a
new medicine and unless you do it that
prescribed way, you are going to get duplicate
medications, even though an alert comes up to
say there is already a medicine like this ordered, are you sure you want to continue, it still happens.

Samer, do you want to comment more, since you have done more research in this area?

DR. KHODOR: Yes. You know, after the refills run out, because they do those refill those, but once the refill runs out, then they need a new prescription, so to speak. And this is one of the things I talked about reorder.

A lot of people will go into their chart and just put a new order in. And it will alert them that there is a duplicate and they will just bypass it, like you were saying and then they will have multiple of these orders.

But this is why we tell them go into medications activity, look at the whole list and reorder that particular med if you have to give them a new prescription because
the refills have run out, you go on that med and it is actually faster.

You could just, again it is like Ted was saying, teaching them the process. And that I what we have done with this 15-minute web-based tool is saying don't just go order another med and create duplicates. This is one of the biggest problems. And the ones that have learned the system have actually said it is much more efficient.

You could also replace meds. So if you are changing the type of narcotic, you could still reorder that Vicodin and replace it with Percocet. It will automatically stop the old one and start the new one as Percocet. So it has a lot of features. It is actually a shortcut for providers but that is one of the ways that we are tackling it.

DR. NERELLA: My question to Heather is -- again, love what you guys are doing. My question to you is when you guys talk to the patient and you are going through
the medication list that you have available
and the patient is kind of going through what
they have, and when there is that discrepancy
that say the patient is supposed to be on a
blood pressure medicine according to your list
but they don't have that bottle, how are you
guys, I guess, providing feedback to the
provider? Because one of the things that we
deal with is that the patient should be on it
because they have high blood pressure. Like
you were alluding to maybe because of
financial reasons they are not taking it. But
are you capturing that data and then providing
it back to the provider so that we can say
okay, we need to either have some kind of
intervention where we provide assistance or
maybe it is an education piece that maybe the
patient doesn't understand that. Because I
think that is very important.

And that is one of the concerns
that we have had with our med rec is who
actually does it. We are trying to get our
physicians to do it because I feel, as a
physician, it is my responsibility. But then
you have physicians who don't do anything.
And then we have other people who are like
well I would like to help but how do we make
sure that we get all of that data in there so
that the right person is taking the position?

DR. SOBKO: So since the patient
has already discharged from the hospital, we
don't want necessarily for them to come back
to us in the inpatient setting for the answers
to those questions but we are going to be held
responsible if they have an adverse event and
show back up at our doors.

So our strategy has been wow, that
is really important. We have discovered a
difference in what -- does your primary care
provider know about this? Do you have his or
her number? I have it right here and I can
give it to you. Let's make a plan that you
call that person today and let's practice what
you are going to say when you talk to them.
You are not going to call an say well I have a medication question, rather I am a heart patient, I am having shortness of breath at rest and I have run out of my Lasix and I have gained five pounds in 24 hours. That message is going to get to the provider and they are going to take care of it immediately.

But we have a way that we also communicate to that community provider. We want the patient to engage with us and learn how to take an active role in better self-management but we can't just change the rules midstream and toss that out at them. It is a process. Having the whole 30 days to work with the patient is, what we are learning is it is giving us enough time to do some really important teaching, to get patients accustom to the fact that ah, my doctor wants to know about this and cares that I am calling and I need to do this.

DR. NERELLA: Are you guys sending anything to the physician's office in
documentation? Because I think that is great.

We all know also that when a patient calls the 
office, that is going to be relayed to the 
nurse to finally go to the physician. You 
know, it potentially could get missed and so 
is there a way to close that loop?

DR. SOBK: Right. So we have the 
Cerner System. And through the Ambassador 
Program, all of the external providers can 
sign on to this electronic system and look at 
the patient's records.

We don't send information about 
the specifics. We send them a notification 
that says a change has been entered into this 
patient's medical record with regard to their 
medications. To log on go here. And then we 
are anticipating that we are going to have 
dialogue.

We haven't run into a situation 
yet that someone is falling through the 
cracks. It is probably going to happen and 
then we are going to have to learn from that
and figure out how to address it but we haven't had that experience yet.


DR. SOBKO: It is going to be available as a commercial product and it is not very expensive. But we wanted to have some more data and work out some interfaces with the electronic medical record before we actually take it that next step.

DR. DERR: Thank you. Yes, sir?

DR. GOLDBLUM: Thanks. Ken Goldblum. Amongst many jobs, I am a practicing geriatrician. I have two comments that I get all of your reaction to. I will give you both of them.

I personally feel that no med data set in an EMR should be able to have just a generic name or just brand name on a drug. Everything should have both the generic and the brand name. I think that is a source of an incredible number of med errors. It is an
incredible source of duplication. I can't
tell you how often I get patients a med list
and it says amlodipine and they are taking
Norvasc and they stop taking their Norvasc
because it is not on their med list or do
something else crazy. So that is number one.

Number two is we are talking about
how to use an electronic medication system to
do med reconciliation. And I am going to
throw out there that I think it is impossible.
And the reason that I say that is because the
step that you are grafting on top is how
patients take their medicines. And that is
absolutely crazy. Until we fix that, we are
not going to ever fix reconciliation.

People do nutty things with their
medicines. They take pill A out of bottle A
and put it in bottle B and take pill B out of
bottle B and put it in bottle A. They have
medicines that they take when it is raining
out. They have medicines that they take in
the fall. They have narcotics that they
rotate on their own. The save antibiotics and use them; you know, what they got for bronchitis for their next cellulitis. You name it, they do wacky stuff.

And this is not unsophisticated patients. I take care of pharmacists --

(Laughter.)

DR. GOLDBLUM: -- yes. It is absolutely everyone in this room. I take care of pharmacists. I take care of nurses and I take care of doctors. They are horrible. Doctors are the worst. Every pill they take they take they make a clinical decision that day whether it makes sense or not to do it. So it is a problem.

When it comes to reconciling meds at an office visit, you know I have patients bring in lists and bring in their pill bottles. What is on their list is not what they are taking. They leave medicines home that they are taking. They bring in medicines that they are not taking.
My nurse takes probably ten to 15 minutes per patient. I am a geriatrician. I think one of the big parts of my job is to stop medicine. So my patients don't have horrible med lists but they are horrible enough. My nurse takes a long time going through it. When she gets done, I go in. I do it again. Sometimes I can take my whole visit doing it and find things that my nurse didn't find.

And then the patient will leave and he will say Doc, give me a list of my medicines so I know what I should do. All right, well we spent the last half hour doing that but that is fine. We will go ahead and give you a list.

So I can tell you, it is a huge problem and I am sure I'm not telling anybody who takes care of patients a secret here. So I don't know how we can graft a good med reconciliation system on top of this degree of misuse, if you will, of medicines. So that's
it.

DR. DERR: Just one little
comment. Most of you might know but there is
a group called Senior Pharmacists out there.
There is about 2,000 of them that are
certified geriatrics that do private practice.
They align with a physician to do that and
then they do the reconciliation of their
medications and that. They are part of the
American Society of Consultant Pharmacists
that you can find.

You had a question?

DR. SOBKO: I wanted to -- can I
make a comment?

Just because you are a
geriatrician I know you will appreciate this.
The story of Mrs. Gallini who has been a
geriatric patient for 15 years. And she has
been very, very adherent, follows doctors'
orders to the letter. And her labs came back
really cockamamie. They were just all over
the place and no one could figure out what is
going on.

The doctor calls the pharmacist.

Is Mrs. Gallini filling her meds on time? Oh yes, every time she gets every prescription filled properly, never a day late.

So we asked Mrs. Gallini can you tell us how you take your medicines? I take these pills with breakfast. I take these pills with lunch, 20 minutes before my meal. And I take these pills at dinnertime. And then I take these at hour of sleep.

We draw more labs. Now they are cockamamie in a different direction. They are just catawampus. We don't know what is going on with her.

So we actually did a home visit. And what we discovered that Mrs. Gallini was taking all of her meds exactly the way she said she was. And she was dumping them into a giant bowl like a salad and she was --

(Laughter.)

DR. SOBKHO: This is a true story
and we never would have known. And so the context of the patient and how they are taking their meds is hugely important. And there they were. It was like medication tossed salad and she was taking her meds, though. So it can happen.

DR. DERR: As an old pharma guy, I cringe every time somebody takes a tablet and starts to grind it to put it into cottage cheese or something like that because it ruins the whole integrity of how the product is to be absorbed.

Yes, sir?

DR. LARSEN: Yes, a couple of questions, more measurement related. The first is sort of a measurement kind of standard or philosophical question.

One of the big debates that we had at my organization was if a medication was prescribed and therefore intended, was that the truth? Or was the truth that the patient was actually ingesting it? And so if I am
going to be held accountable for beta blockers
or I am going to be held accountable for
aspirin or highly active antiretroviral
therapy, what was the important thing to
measure, the prescription or the taking?

And I am curious if there is a
sort of standardized because I think we
conflate those really easily and the better we
get at measuring adherence, the more that is
going to become a primary focus that we need
to sort of think about in measurement.

DR. KHODOR: This is Samer Khodor
from Colorado. I can address that. That is
something we have talked about a lot.

And you know I think the first
thing to agree upon is the medication list
that the providers are prescribing in terms of
what do the providers want the patient to be
on. That is the first start. So if somebody
needs to be on aspirin and Plavix, they just
had a stent, those need to be on there just as
prescribed.
Now the patient, you are right, might be doing something totally different and that is in terms of adherence. Maybe they can't afford it. Maybe they don't tolerate it. Maybe they forgot to pick it up. There is lots of things that can skew that.

But the first thing for the medication reconciliation piece is I would like that list to look exactly like what the providers are prescribing first. And then if the patient is not doing it, then we could address it and say why aren't you doing it and really educate the patient that they need to take the Plavix because they just had a stent or et cetera. Or say well you can't afford this or you are not tolerating this and let's switch this up and then we can make that modification.

DR. LARSEN: I'm curious of others with of the same thought. My organization is very patient-centric in our point of view and we kept saying the patient is the source of
truth. And by socializing that very hard when we had MAs doing medication reconciliation, they were very clear the patient said this is what they are on. I don't care what is on the list, I am doing what the patient says. They are the source of truth.

And that created conflict between the doctors who are being measured for performance on what they prescribed versus us being patient-centered saying that the patient says they are not taking that.

DR. PALEN: Well this is for those out in the audience, this is Ted Palen from Kaiser.

And you know one of the issues is exactly what you raised. Is it focused on doing something that will create a metric that can be downloaded? So I can easily hit the med review button in our Epic system and it documents that Dr. Palen reviewed meds on such and such a date and time. But what does that mean? That is the heart of the issue. It
could be a metric that gets down stream and
guess what? My numbers look great because I
hit that button med reviewed every time. But
that doesn't mean exactly what you are saying.

So if we think about where

Meaningful Use is, it really is doing what
Heather is doing. It is what our discharge
nurses are doing. You know, three days after
discharge they are calling patients and doing
this but how is that recorded? That is all,
you know, usually free text. There is long
conversations with the patient. And that is
the issue.

DR. LARSEN: Well how do we not
penalize Heather's organization for giving
much better about what patients are actually
doing? Because if everybody else is being
measured on what they are intending to do,
what they prescribe, but she is actually
measuring what the patient is doing and that
is a lower number. For doing good work, her
hospital may get lower scores and I would hate
that to happen.

DR. KHODOR: You know it comes full circle, though. This is why we collaborate really closely with med adherence. You know, you start with that list as prescribed and then you could -- well that is a start. That is how you can address -- if that is accurate, then you could address those medications with the patient. And then figure out why they are not taking it as prescribed.

Because if you do what the patient is doing, some of those could be dangerous. We have had patients in the hospital who stopped taking their Plavix because they didn't want to pick it up for whatever reason and they just had a stent placed.

So first to say not to put it on there and have it forgotten and have the patient leave could be very dangerous. This is why it really has to be the list initially that is being prescribed and then that will help adherence and we could get better
accuracy in adherence in that sense.

So if their patient refuses to take it, that is a different scenario but at least you could capture that by starting with a prescribed list.

DR. SOBKO: The European Pharmacy Coalition did something very interesting to address the issue of adherence. And they implemented a strategy where the prescriptions go to the pharmacy and at the time that the patient picks up their medications, they sign what is kind of like a contract that says they will take the medications as agreed, not as prescribed but as agreed. And that slight change started to prompt some behavioral changes in the way patients were thinking about their medicines because they were agreeing to take something not because they were told to do so but because they agreed to do so. Very interesting terminology.

DR. MC GINNIS: Well I think it speaks to a whole different paradigm of how
providers have to think these days. We can't just tell patients what to do anymore and that is what we have done for years. And I think as we are seen, when we begin to talk to patients and figure out what they are actually doing, we find it is very different than what we told them. So I think you bring up a good point that it has to be patient-centered care. They have to feel that they are a part and that they are being heard and that they are a part of the system, in order to be compliant with their medications and do the things that we are asking.

DR. DERR: And ONC says put the I into health information technology and that is patient engagement. It is a big thing with Dr. Mostashari.

DR. LARSEN: A quick second question which is again with measurement.

There is a tension here that sort of best measurements that would help patients and providers are very focused around
conditions in that specific med. So building one around hypertension drugs and do you get appropriate treatment and statins and you have taken it right and monitored correctly. But those are really hard to scale broadly. So then there is a desire to build broadly scaled medication measures. But those have a lot of challenges in the variety of how we use medicines. Some are more PRN, some are absolute. Some are a little bit squishy. Some are between PRN and absolute.

And from your standpoints, what is the ideal characteristics of a measure, a metric that we use in, for example, a federal program around medications?

DR. DERR: I guess that is a major question. They are going to answer that on their report.

Rosemary?

DR. KENNEDY: Do you have another comment in reference? Just it is a follow-up to Kevin's question.
If you think about medication and the codes around meds. And I think Kaiser alluded to this and Shek, we have just come up with ten different scenarios and it really has implications for point of care documentation and quality measurement.

Is it prescribed, ordered? Do you want that it was reviewed? The patient reported taking it as agreed upon or patient reported taking it as ordered? Do you want to now was it administered, dispensed, refused? And it can get very complicated in terms of information that is needed for care delivery and then what you pull out from a quality measurement perspective, based on the context of what is in the in measure.

And it seems like on the surface it would be simple but underneath the covers, it is not really. So I didn't know if Kaiser or Shek or anybody has any comments on that.

DR. PALEN: Well just those metrics, think about how do you track those.
Again, it could be death by a thousand clicks, if you are going to try to do all this and record it. And again, ease of use of being able to do it from both the provider's perspective and the patient perspective. If we have the patients linked in through a portal, it is got to be easy for them, too.

You know as easy does all these standards not only have to include the generic and the brand name but maybe the color of the pill. Because let me tell you, my patients come in, they have no clue. I take the blue one now and I take a half of the green one and then I take the one with the capsule and I feel this way. Well you know, that is how they do their meds is by color and shape. Oh, it's the triangle.

DR. DERR: When it turns colors, they think you are trying to kill them.

DR. KENNEDY: But it is important though because if we are tracking ordered for Kaiser, you could do really well and Heather
will get dinged because she is really tracking whether they are taking them or not and maybe they are not. And they probably not for Kaiser either but you will end up looking better.

MR. MEHTA: Yes, I agree. I mean for closed systems it is a lot easier I think to kind of account for that, whether the patient got the medication or not. But from a more global perspective, I think it is really just, the overall theme, I think it is just the patient understanding of what that medication therapy does and is doing to them. And I think to capture that is just very difficult just from a general perspective.

DR. PIERRE: And I think one of the ways to combat these issues is to see the patients regularly. Patients that I see in the office that are admitted multiple times in the hospital, I see them every week, every other week. And that is a good way for me to assess if they are taking the medication
because the more encounters I have with them, 
the more likely I might find something that 
maybe the reason why they are not taking the 
medications or have them bring in their lists 
of medications or actually the medicines 
themselves every time they come in is helpful.

As far as the measures are 
concerned, I think the easiest way to measure 
things is by concrete data, by looking at the 
LDL levels in patients with high cholesterol. 
That is the easy way out. The other ways are 
more difficult.

I think it is clear to me that in 
my clinical practices, patients that are the 
sickest get seen more often. So and that is 
how we kind of help adhere to that. How we 
measure that, I am not sure.

DR. PALEN: Brandy, do you just 
want to talk briefly about some of the work 
you have done on your adherence and how we are 
using the data to really capture whether the 
patient is taking meds or not?
DR. MC GINNIS: Right. So we are in the very beginning stages, like I said, of integrating it into our electronic medical record but because we are a closed system, we do have the ability to identify the patients that are non-adherent with some of these equality measures. And although very rudimentary right now, we are doing some very just basic outreach to those patients, via pharmacy students or just some of our clinical pharmacists to exactly what you guys have talked about, to get at the heart of why they are not taking the medications.

And time consuming? Yes. But at the end of the day, talking to the patient is where you are going to find out the information. And so that is kind of what we have been doing at this point.

We do, like I said, hope to have the information a little more readily available for providers to be able to initiate those conversations at point of service, which
is something that I think most providers may
or may not do at this point because they have
a limited amount of time to address multiple
issues, much less the brown bag medications
list.

And then we also hope to tackle
adherence from more of a population management
standpoint via some type of IVR response
system to do refill reminders. Because we do
know that forgetfulness is one of the more
common barriers that we see with adherence.
So hopefully by attacking it from multiple
aspects we can begin to address adherence as
a whole.

DR. DERR: Yes, Dave. Just a
second. I also want to add the patient sees
the pharmacist more than they see anybody else
and there is rules and laws about consulting
with them. Encourage your patients when you
go to the pharmacy to pick up the refill to
talk to the pharmacist and make them do their
job, not just stand back and counting tablets
or something like that, but they are part of that team. Many of the committees I am on I am the only pharmacist on it because we keep forgetting that very valuable resource that goes to school for six or more years to get their Pharm.D. thing.

David.

DR. STUMPF: Yes, Dave Stumpf. I would encourage a little out of the box thinking. You can start with the pharmacy. All of these over-the-counter medicines go through a cash register with a barcode and data is collected. The retail people know what medicines people are getting.

Also when we were building the new Northwestern Memorial Hospital back in the mid-'90s, it occurred to me why are we using barcodes, because they were just coming in at that point, why aren't we using RFID tags? So if the wrong medicine goes through a door, the alarms go off just like they do if I walk out of Walmart with something I didn't pay for.
And why can't we use those RFID tags to figure out when the patient moves the bottle in their home?

So I would encourage a little out of the box thinking. There is technology that allows you to do this stuff and retail industry is using them.

DR. DERR: We have got time for about one more question. I would like to bring up one issue and that is we talk a lot about disease management and meds with disease management but at least the patients that we see and I am sure you see have comorbidities and chronic care. And the quality measures that are necessary are even more complex than we talked about just one disease state and whether there should be quality measures associated with chronic care and comorbidities, which just compounds the question.

I had one more from the phone that I better do to do my job here. This is for
you, Jude.

How well utilized is the patient portal in your EHR system? Do you provide online or telephone technical support for the patients?

DR. PIERRE: In our practice, we have got three providers in my immediate practices and about 20 to 25 percent are actually online with us right now and communicate with us.

Whenever a prescription is ePrescribed, it does send out an email alert saying that we sent the prescription to the patient's pharmacy. The vendor does support the patients on the patient portal site.

So that's it.

DR. DERR: I've had a couple other ones. The physicians in the Kaiser program, do you also have outside physicians that aren't part of the Kaiser uniform universe in your system?

DR. PALEN: So in Colorado there
is the Denver-Boulder Metro Area that the classic Kaiser model. We have expanded now to northern Colorado and southern Colorado where we have a network model where there is providers in the community that are contracted to provide care for the Kaiser members.

So there we see the gaps that we are talking about. About external prescriptions, how do we understand the flow of that? So we have the tension both of -- we have the luxury of both being a closed system and a network system and the problems that go along with that kind of endeavor.

DR. DERR: I know that one of the things that the ONC is very strong on these days is interconnectivity to the PHR. We talked a lot about today interconnectivity to an EHR. And of course the EMR is within the facility.

So do all of you think when all of you have mentioned put it in an EHR, do you also mean that it has been put into the PHR?
DR. PALEN: So again, I will talk about Kaiser. As part of the Epic system, which is our EMR system that we use, there is a patient portal where patients can securely log in and see their active medication list. And this is why Samer and a lot of other people are struggling, working so hard to get active med lists because when a patient logs into that portal, they see their active med list. And that is what they pick from for request refills or see what they are on and be able to manage their own health. And we have 60 percent of our members in the Denver-Boulder area are active users of the patient portal.

DR. DERR: And one for Shek because you didn't get asked too many questions.

Does the ASHP have any toolkits or anything that people can resource on this issue that you guys can provide to hospitals and physician and long-term post-acute care?
MR. MEHTA: Yes, well specifically we have a consumer website called safemedication.com that is a great resource just from an ambulatory and outpatient setting for patients just to get more medical information and drug information.

And then we have compendiums of best practices and also our compendium on drug information, AHFS, and Trissel's Handbook on Injectable Drugs which is also available electronically for different mobile services.

In terms of actually quality of measurement, our website and Resource Center on Quality Improvement lists how our best practices align with National Quality Strategy. So that is one other way.

But for specific toolkits and bundles to track medication management within hospitals and health systems, we don't have anything yet.

DR. DERR: Okay, first thank you.

Final -- oh, let me get this one and then we
got -- I'm going over now. This is for Kaiser also.

At Kaiser, patients can't see directions on prescriptions. That's what it say. That is a statement, I guess, from Sherry Hearn.

DR. PALEN: Yes, on the KP.org web portal for the patients, yes they see their active med list. They don't necessarily see the instructions. Again, I think this goes back to the whole idea of working with vendors to be able to provide information that is really meaningful. No pun intended with Meaningful Use. Maybe that is pun intended.

DR. DERR: Last question.

MS. MARTINS: I am Rute Martins. I work for the Joint Commission. So from a measure developer's perspective -- and I am sorry I am going to bring this conversation all the way down to the runway into the very, very simple things which sometimes are the details that we get hung up on for the
effective implementation of electronic measures.

So from a measure developer's perspective sometimes we struggle with these vocabularies, such as RxNorm, that vendors and providers are using at the point of care. And one point that Shek made was that EHR vendors don't really agree upon on the level of granularity that should be used in documenting medications.

And then also, and this is just me adding, but the different context in which medications are referred to. So from a provider perspective and from an EHR vendor perspective, which levels of granularity are being used in RxNorm in terms of defining home meds, in terms of defining medication allergies, defining medications that are being ordered and administered in the context of an inpatient encounter, medications that the patient is being sent home to. Because all of this really impacts the level of granularity
with which value sets are defined in the
context of an eMeasure.

And the second part of my question
is we are looking at Meaningful Use Stage 2
measures that are as simple as did the patient
go home with this medication. And we don't
have a really clear way of conveying discharge
medication. Whether this is a QDM issue if it
trickles all the way down to the HL7 reference
information model where the problem is, we
really need mechanisms to communicate and
align on how this is being represented because
sometimes it is not. We don't really want to
make it hard to represent but what are EHRs
doing? And are they doing the same thing?

And how do we advance solutions to
standardized representation of all of these
concepts in these different contexts?

DR. DERR: A global question.

DR. CHARTERS: Nobody here so far
has mentioned Blue Button but we do have a
standard. There was a consumer health
information technology meeting a week ago
Monday that the whole day was just on Blue
Button and what that standard is.

So we don't have to reinvent this wheel. It is not like we don't know what we
need to provide and what it needs to look like in the way that we provide it. It is out
there. It is being used now. And I can tell you that CMS is a big driver of that. VA and
DoD are both compliant with it and those are pretty large healthcare delivery systems.

MS. HIBAY: I don't mean to sound naive but what is Blue Button? am I the only
one who doesn't know this?

DR. DERR: Just go on our website. There is a lot of information. There is
hundreds of people out there. And it has been
--

DR. CHARTERS: Rosemary, did you want to address it or did you want me to speak
to it?

DR. CHARTERS: All right, what has
happened is that there was an agreement among CMS and the VA and the Department of Defense that we would come up with a low-tech text file that would be human readable that would present a subset of information to a patient so that the patient could actually see the information about them from their electronic health record.

And so it has a standard sequence in which you present information so that patients will always see information in a certain order and medications are a part of that standard. And when we give them medication information, we give them allergy information because our assumption is they can either view it on screen or they can print it out. And now they can download electronically in a machine-readable form, too, but the assumption was that they wanted to have this information so that they themselves could be the bridge between different providers because there is no continuity of care of the majority
of our patients.

So it was to give them something that they could read and understand that they could share with other people but to do it in the same way all the time no matter which source provided that information.

I mean in short Blue Button is your demographics. It is your medication. It is your lab results. It is your allergies and it is done as a summary.

And you can chose what time frame it covers. So you could go -- the default is I think 15 months. Most people only want to know the last 15 months of what they have done. But if you wanted to set it up to go all the way back to the beginning of your electronic health record, you could go back that far.

But the whole intent was to have a standard way to communicate this information. And I am just saying instead of asking vendors what are you doing to create a standard way,
I would go look at what we have already done because we are using it and it I already working.

DR. KENNEDY: And just one other comment. In addition to that, I think some of the challenges are there are certain things we collect about medications, whether they ordered or administered. But then there is these concepts of states and how do we capture that.

So if a patient is discharged and you wanted the discharge meds. Or if I am getting a patient in CCU, I want the meds that are coming from the OR orders. At different states in time, it can be somewhat difficult to kind of group it and get that snapshot in time.

Because I tend not to think transition meds if I am getting a patient. I just tend to think the active order and I put the meds on the active list. But if we wanted to go back and follow a patient, a CABG
patient from the OR through homecare and look
at at different states, it could be a little
challenging getting that from an EHR,
particularly because it may not be what people
are thinking as they are caring for the
patient in that current episode, which is
probably a great segue into the -- Kevin is
going to figure it out for us in the 12:45
panel.

(Laughter.)

DR. DERR: This is such an
important subject, I think people if you have
other ideas, because NQF is very important as
somebody else commented this morning of
aggregating all of this information and not
making it in silos.

So there is only a few places that
that happens. In my LTPAC, it happens at the
S and I framework and at NQF. And otherwise,
it stays in silos out there.

So any other information or ideas
on quality measurements, please just send them
to Rosemary or something like that and think out of the box.

DR. KENNEDY: Okay, John, your time is up.

(Laughter.)

DR. KENNEDY: Thank you very much. Round of applause for the panel.

(Applause.)

DR. KENNEDY: We will have a lunch break. Let's reconvene at 12:50. Take about 30, 35 minutes for lunch and the second panel will start then -- third panel.

(Whereupon, the above-entitled matter went off the record at 12:24 p.m. and resumed at 12:53 p.m.)

A-F-T-E-R-N-O-O-N S-E-S-I-O-N

(12:53 p.m.)
MS. FRANKLIN: So the next panel, Karen? I just -- I know we're going to try and finish at 3:30 and respect the fact that people have flights they want to get.

So as I said, keep eating lunch and we'll go ahead and start the next panel which is Data Visibility. And I'm going to turn it over to, I don't know, Kevin or Karen. One of them can go ahead and kick it off.

DR. LARSEN: I'm Kevin Larsen. I'm the medical director of meaningful use for the ONC, the Office of National Coordinator of Health IT. And most of my team is here today actually. We oversee the clinical quality measures components of the -- from the ONC side.

We work in partnership with CMS, the measurement team at CMS who through the EHR incentive program are really the primary owners of the measures. But we help make sure the data standards and the components and the sort of EHR-ness of those quality measures is
As I mentioned before my background is as a CMIO and general internist at a health system. I was at Hennepin County Medical Center in Minneapolis where I oversaw a large implementation of a hospital and a number of clinics. And they actually are pretty proud, they just got their HIMSS Level 7 accreditation a couple of weeks ago. So I'll turn it over to Karen.

MS. NIELSEN: Hi, this is Karen Nielsen. I'm privileged to be on the actual committee for this particular meeting. This has been an exciting time.

My background is that of public health and for a short period of time I had the pleasure of supporting CMS inpatient clinical quality measures in collaboration with CFMC and OFMQ. So I understand from the challenge that individuals are facing moving from chart abstraction into the technology world.
I just joined Siemens just this last fall and until a few months ago I thought S-O-A-P, soap, was just for washing dishes. (Laughter)

MS. NIELSEN: So, for those of you who have no idea what I just said that's okay because there's a huge learning curve that we all have in medicine right now to understand technology, its limitations, its opportunities. And someday yes, we will hit nirvana, but like Dr. Mostashari said it's going to take some time and it's going to be a little rocky. So pleased to be here.

DR. GOLDBLUM: Good afternoon, everyone. My name is Ken Goldblum. As I've said earlier I'm a practicing internist and geriatrician. Most of my professional work outside of my actual patient care has been around physician integration specifically in primary care and trying to do quality improvement for primary care docs.

I'm the medical director for my
medical practice and I'm also the chief medical officer for Renaissance Health Network which I'll describe to you a little bit more.

DR. STUMPF: I'm Dave Stumpf. I'm a professor at Northwestern University where I chair the neurology department and was on faculty practice plans and hospital boards for on and off about 20 years.

I then spent 6 years at UnitedHealth Group on the payer side with their mega data, measuring quality and learning lots of the problems with that data. I'm now out doing consulting work. I'm still teaching at Northwestern in the master's of medical informatics program but I'm doing consulting with our Illinois state HIE, with several startup companies and I've spent quite a bit of time at NQF. And that's what I'm going to talk about today is primarily how some of the NQF frameworks may relate to our discussion today.

DR. LARSEN: So I'll set this up a
little bit. We had a hearing earlier this summer around quality improvement through the ONC as part of the federal advisory committee. And we had a number of people talk about what they need for quality improvement. And data and feedback were really right up there in the key needs for quality improvement.

And one of my favorite words I learned from that was "small data." So Joe Kimura who maybe some of you know who works at Atrius Healthcare in Massachusetts said that although his organization has big data and there's a lot of interest -- they're connected to Harvard -- there's a lot of interest in what to do with big data, he as the operational lead of their ACO is focusing on small data which he said is the data that people need at the front line in realtime to make decisions.

So the interesting thing to me about small data is that that's the place where measurement and business analytics and
clinical decision support start to not be distinct. Those three things start to all be one interconnected set of operators that help people do what we want them to do which is achieve better care, better health.

So, one of the things we're trying to think about here is how do we -- as we move, as Dr. Mostashari said, from this retrospective frame for measurement where 3 months after a hospital has discharged someone tells me that their heart failure didn't get the appropriate treatment to realtime measurement, what does the data visibility around that realtime measurement look like and how does that impact my ability to improve care.

So, one of the things we're trying to do is slay this data quality dragon. And this is some of the challenges that we know that we have already. There's a lot of data disparity across systems. Data is currently in silos and there is a lot of inertia and
kind of incentives to keep data siloed. Some of that is a business reason for keeping data siloed, some of it's perceived risk around loss of data.

There are any number of reasons that data stays siloed and how do we make data not be siloed. To our last talk, how do we make sure everybody gets good medication information all across the landscape so that the patient actually sees it.

We also know that different users of data will want to see data differently. And we have those opportunities now with the tools that we are using but we have to be sophisticated about how to do that.

So, the paradigm that I've lately been thinking about when I have doctors complain to me about how crappy they think their electronic health records are is I want to think about how do we make all healthcare providers work in a system that's like computer-assisted flying.
So, we all trust jet pilots are smart and talented and really know what they're doing. And they used to fly jets without computers. Now they fly jets with computers. None of us think they're less smart or less good at what they're doing. We actually think that the computer is doing stuff that helps them be even safer, better flyers. What the computer doesn't do is give them warnings and alerts and distractions that keep them from their primary mission of making sure the plane is in the air and lands safely.

How do we rethink our paradigm of health IT so that all of our practitioners are jet pilots and they're getting computer-assisted flying so they're safer, faster, better, and they're not getting lots of sirens and buzzes and alerts and alarms that make their life harder and make things actually in the end less safe?

So, as we think about how to get the data then we have to think about how to
present the data and how to present it to the
right persona at the right time so that it
truly helps them with care. This is all hard.
This isn't easy, this is all hard, but it's
doable.

So again, this sort of small data
to my mind is really the frame that has helped
me think about that's my goal here in the next
few years just like Joe Kimura's is small
data, to the right person, to the right place
at the right time.

MS. NIELSEN: That's a great
analogy. I think as all of us think back to
the plane landing on the Hudson River I think
it -- I like that analogy a lot as far as the
pilots because I think everybody who remembers
the airplane being landed on the Hudson River,
we know a computer didn't land that plane.
But, we also know that there is great
technology out there that can be used.

And as Kevin alluded to we've
already started to discuss some of these
issues surrounding the challenges of data.
And that's what we're going to talk about, 
data elusivity. How do we find it? We know it's out there. How can we get it?

How can we get it into a fashion that the two computers talk to each other and know what the other one is saying? And how do we make sure that it gets to the point of care at the right time without bombarding an individual with too much information.

So, these -- what I want you to do is just look at this particular slide real quick. I apologize for those who are in the back of the room and can't see it as easily. I'm just going to quickly talk about these five silos. And the reason that I'm bringing this up now is just for you to think about as we go through the two presentations.

You're already going to start to see that we already started to touch upon some of these key areas. We know that we have challenges from the standpoint of discrete
data being available in an electronic format
but it's in other pieces of equipment that do
not talk to the EHR.

We know that we have structured
data that's available in different settings.
We know that for instance the ambulatory
system might not talk to the acute care
system.

The next one. We know data is
captured on paper but it's not in electronic
format and we need the knowledge that's in
that document.

The next, the data is captured
electronically but not in structured elements.
So that's when we can start talking about
natural language processing hopefully in the
future.

And then also the last one,
structured data are captured but they're not
codified.

And so all of these areas are key.

They're the current challenges we face.
There's different ways to approach it and our
two guest speakers are going to start to do
that today.

So with that I'm going to turn it
on over.

DR. GOLDBLUM: Thank you. Good
afternoon again, everyone. Somehow whenever
I speak I always get the sleepiest time of the
day so right after lunch. I'm going to do my
best to try to keep everyone awake as well as
I possibly can.

I'm going to take the discussion
down from the level of the treetops not just
to the ground but actually down into the
trenches where doctors are doing hand-to-hand
combat with their EMRs trying to get them to
actually help to do quality improvement and
population management.

As I said, my group is Gateway
Medical Associates. We are 30 internists and
family docs. We're outside of Philadelphia.
We've been together since 1996.
We've been using Allscripts Professional since 2006 and nothing I say should be construed as being supportive or critical of Allscripts, it's just I think completely representative of what's out there. We are fortunate enough to have three full-time IT people without whom we probably couldn't have done anything that I'm going to show you.

We're meaningful use certified, we're a Level 3 NCQA certified PCMH. We do produce an internal all-patient quality report but what I'm going to talk to you about today is how we extract quality data from our EMR to upload it to an organization called Renaissance Health Network. Renaissance in turn is a 260-primary care doctor IPA in southeast Pennsylvania. Gateway, our 30-doctor practice, is a part of this larger IPA. We have had an ACO-like arrangement with Independence Blue Cross, the dominant payer in
Philadelphia since 2001. And based on our work with IBC we were chosen to be a Pioneer ACO at the beginning of this year.

The reason that we are extracting quality data from our EMR is for upload into a web-based application that we developed ourselves that we call Population Management Tool. PMT as we know it is a registry but the real beauty of it is that it allows for very practical and easy reporting on the practice side for use for quality improvement. So once we get our data into this tool we can really work with it to try to improve the care we give to patients.

Here's a screenshot from the tool. I'm not going to really say a lot about this tool other than that it is something that we had to develop ourselves to keep all of us on the same page from a quality point of view because EHRs just did not do this kind of thing.

What this shows is the given
quality measures that are required for any
given patient and it also tells you at a
glance what quality measures are not at goal
or what's incomplete.

This is one more quick screen from
the tool. And what you see here is a quick
list of the tests that patients are missing or
where they're not at goal. So this gives you
a little window into how it can be used for
quality improvement.

These are the data elements that
I'm going to quickly talk about. Most of you
probably recognize these as the ACO quality
measures that need to be reported by ACOs via
the GPRO tool.

What I'm going to do is talk about
each one of these in turn briefly, the
challenges that their collection presented to
us and how we solved those problems. I don't
claim that, you know, our solutions are
necessarily the best. All I'm saying is that
they got the job done for us.
These are some of the challenges that we faced. And as I said I'm going to illustrate each of these in turn using the quality measures from the last slide.

I want to say one quick word about denominators. Not a big challenge for ACO work because we have a defined population of patients but when we do our internal reporting for our practice it's a big problem. EMRs, even those that are really actively pruned tend to become cluttered with patients who just don't belong to you, whether they've died, they've left your practice, they were people you covered for one time in the hospital. But this is a real big issue is keeping track of denominators. In my opinion it's almost as much of a problem as keeping track of numerators.

So let's go ahead and talk about the measures starting with vaccines. Vaccines are about as simple as it gets. If a patient comes into our office, we give them a vaccine,
we bill for it. That data automatically goes
into the flow sheet that you see up here on
the screen and we can search on it and all is
well.

But I counted, in our EMR there
are four different places that a doctor can
potentially and logically document
immunization. And when a patient comes into
the office who's had a vaccination elsewhere,
for example, they got their flu shot at the
pharmacy, or they already had their Pneumovax
when they became a patient of the practice,
our doctors can and did document in any of
these different places. So the challenge here
was standardizing where that data was
collected in the medical record. And we chose
this flow sheet as being the most logical
place.

Unfortunately, when it comes to
Pneumovaxes I also double-enter it because I
put it somewhere else that has more visibility
than this particular flow sheet. And you
know, that's probably a topic for another talk is double-entering in the electronic medical records.

Blood pressure and height/weight also entered in a standard field. Everybody puts them in the same place and it's searchable so it's easy. But the challenge here arises because when a patient's body-mass index is outside of the normal range we need to document that we've taken an action and we need to document it in a searchable way.

So one way to do this is what I'm showing here. You can use a CPT code. So we enter here nutritional counseling into our assessment and plan and if the patient's BMI is out of range then we can also search on this and document electronically automatically that we've taken the appropriate action.

Cigarette smoking also fairly straightforward. We have a screen where we can document it. We can also choose their status and we can see it easily. I don't have
a pointer, I'm sorry, but somewhere down there
toward the bottom end of the slide in social
history is tobacco use, never/smoker. Easy to
see, easy to capture.

And again, if a patient's a smoker
we have to document the action that we've
taken. And again here we use a CPT code that
exists. And even better here this is
something that Medicare actually pays us to do
so we capture the data and we get paid at the
same time.

This is a screen, a busy screen,
but what I want to talk about here is
collections of glycohemoglobins and LDL
cholesterols. We interface with all the major
hospitals in our area as well as with the
major commercial labs. And when they send us
a piece of lab data as data all is well. We
can search for it and it's very easy.

The challenge that arises here
though is a lot of things come to us from labs
that we don't interface with. So it comes in
as a fax and we can't search on it. So to get
around that what we have to do is we have to
recognize if we see an LDL or a
glycohemoglobin this is data that we might
want to search for. If it's a patient that's
involved in one of our pay-for-performance
programs including ACO we have to go ahead and
enter an order for that patient, enter the
result and enter a date. And poof, just like
magic or perhaps after 5 minutes and about 100
taps you've converted that fax into data.

And I really think that this is a
huge problem. The data/document divide, and
I know all of you speak about this all the
time, is just a gigantic problem. We have in
our EMR after 6 years 106 gigabytes of faxed
information that's come into our practice for
30 doctors in just that period of time. And
it's phenomenally frustrating when a patient
is sitting in front of you and says doc, what
did that echo I have 2 years ago showed and
you have to look in two different places to
try to find that result. And not only that, in an electronic chart it's not even searchable. So again, a topic for another day but it's one of my pet peeves so I figured I'd spend a second on it.

Depression screening is something that we did not regularly do prior to our Pioneer work. So here we had the opposite problem of what we had with vaccines. Instead of having them spread out all over the chart we had to actually create a place in the chart for them to go. So we created this history item for depression screening. And not only that, we also created three or four possible actions that a doctor could take corresponding to the information that we have to give to CMS via the GPRO tool. And again, it's in a searchable format. So we have referral to a mental health provider, drug therapy, et cetera.

And we store that data in a section of the chart called health
maintenance. This is a very convenient area. It's easily visible on the face sheet. And we put all of the screening tests here so that at each visit we can quickly take a peek and see what screening tests that particular patient may need. So depression screening is here. I mentioned earlier that I double-enter Pneumovax and that's because I also put this here so I can with one quick glance know that the patient's had their Pneumovax.

Falls assessment is another quality measure for ACO. Like depression we didn't have a place for it. We weren't even really doing it on a routine basis. So again we created an item. We put it here. We can search for it and we can report on it.

This is also where we put our cancer screening information. Mammography is another good illustration of converting a document into data. Most of these come in as letters and not as data. So instead of entering it the way I described that we do for
lab studies here we enter it into health maintenance with a date and we can go ahead and search on it.

The last thing that we put in here is colonoscopy data. Colorectal cancer screening was a complete nightmare. That data, you know, there's so many different tests and so many different places it can be done. You can do a fecal occult blood test in the office, in a laboratory. You can do a flex sig in the office, you can do a colonoscopy, hospital, outpatient surgery center. And most of this data was coming in as letters and it was being documented inside of notes and all over the place. So what we had to do was we had to get all the data and put it right here into health maintenance. So number one, it helps us do better care because we can quickly see that the patient is or is not at goal, but also it allows us to easily go ahead and report. So let me jump back and just go back to my list of challenges.
I think I've illustrated each of these at least one time using the Pioneer data elements. I think that what I've been able to show is that there is still a lot of work that needs to be done in order to make this a useful process.

I don't claim that any of our stuff is particularly elegant. In fact, some of it you're probably thinking to yourself is downright ugly and it is. You know, doing these workarounds take a lot of time and a lot of effort but at the end of the day we get our data into the population management tool. Once it's there we're able to work with it and do quality improvement, and hopefully we're going to be able to export this data using the GPRO tool for CMS.

So, thanks for your attention.

Hopefully none of you fell asleep. You know, I thank you for the opportunity to talk to you and I hope that these examples help you understand the challenges that we face. And
I hope that the good work that all of you are doing is going to make it easier for those of us that are in the trenches that are trying to actually go ahead and do this important work. I'll pass -- I'll get David back to where he belongs.

DR. STUMPF: So, thank you. My talk I think is going to be a little bit more aspirational than the best practices that we've heard about today. And they've been excellent talks. So I'm going to try to talk at a little bit higher level, to step up above some of this fray. But I also want to talk about assets that are actually available today. So not pie in the sky, but things that people have actually created frameworks around and that we have the opportunity to deploy in the real world.

So, I want to start with a couple of reports. This IOM report came out just a couple of weeks ago and their basic point they're trying to make here is one that Kevin
made, that we really want to get to better ways of capturing data in realtime and use that for continuous kind of improvement.

One of the concepts that they introduced here speaks also directly to one of Kevin's points. We all know that there's an amount of information in medicine that overwhelms any individual provider. But what this report begins to point out, that there are also tasks of care that also overwhelm us. We don't all know. I couldn't tell you all the steps a cardiac surgeon needs to do to get somebody ready for a big operation. And he couldn't tell, you know, me how to take care of a neurology patient with a complex problem. So these tasks are the small data that I think Kevin is referring to and something I'm going to spend some time talking about.

They had a couple of recommendations that came out of this recent report, that the digital infrastructure really needs to change. And I point out particularly
that more information about the delivery process and the ability to document exactly what an electronic system is doing. And then also we need better research methodologies. We need better ways of extracting this data out in a manner that's going to be useful to generate knowledge and really create learning systems.

So, this is an earlier IOM report that I hope most of you had a chance to see. And basically this speaks to the complexity of the system we work in and that it's not all technology. It's people and processes. I want to emphasize the process because workflows are something that has in the past received inappropriate attention. It's certainly getting that attention now because we recognize that quality is a journey, it's not a single thing.

This came up in the discussion about how do we hold people accountable for a patient getting the medicine. Is it the
prescription, is it the dispensing, or is it
the patient actually taking it? You can't
measure that quality and improve it without
understanding the process.

And finally, we have to be able to
tie this stuff to the incentives that exist in
the system. And I think there are ways to
bring all of these things together.

What I want to start from is a
framework that people have kind of pussyfooted
around here, that there are some problems
here. And I'm speaking a lot towards I think
some vendors here and a little bit to the ONC,
that certification of EHRs clearly is not
enough. And just counting the number of
people who have an EHR isn't enough either.
That we have defects in the implementation,
these are difficult things for doctors and
hospitals to do and we don't have good
reporting methods of documenting those kinds
of defects.

I also would submit, and I'll talk
about this, that interoperability is too narrowly constrained at the present time. And also I want to emphasize the tasks again, that these are granular units of work in healthcare but we really manage many of them inadequately. We need to do better.

So, I'd like to suggest that we need to expand the definition of interoperability. Merely exchanging a clinical document is not straightforward. It's important, there's no question about it, but we see electronic systems restricting access to data and not opening up their material and their capabilities for others to interact with in a more significant way. I believe we need to get to an interoperability definition that includes the ability to interact like APIs do with an electronic environment.

And finally, we can benefit by having harmonized platforms. This gets to the issue is the EHR really the place where we're
going to do most of this work. And I would submit that, as you've pointed out, that EHRs are not set up to do a lot of what we want to do and maybe they shouldn't, but that we can have platforms that ride on top of an electronic health record and an ADCT system and a pharmacy system and aggregate and harmonize that data. And in order to do that they need to be non-disruptive to the underlying system, scalable and extensible.

And the only way you can do this is by, you know, getting to what we call the difference between model of use and model of meaning. You have to understand the meaning of that data to be able to do that kind of harmonization.

So what I'm suggesting is, and the ONC really addressed this very early on and I think it's fallen a little bit by the wayside is that we really need to have modular capabilities. They're very desirable, that you want to be able to compartmentalize
capabilities so that they can be managed by subject matter experts who have the best knowledge and the best systems for the particular task at hand. That's going to stimulate innovation. Just look at your iPad or iPhone or your Droid and see all of the innovation that occurred when you created that kind of a platform.

And what that harmonization that I talked about does is it really creates a last mile where you can extract things out of multiple systems, put them in a platform where lots of things can run.

So, you can't read this and that's deliberate but this is -- what I'm going to talk about next is not my own stuff. This is largely stuff that's come out of NQF and it's the prior work there that I think does -- if you look at it in a more integrative fashion I think it has a lot of answers for where we want to be. And I've constructed this in a way that might make the picture a little bit
more understandable.

And this particular name, the Person-Centered Coordination Plan, came out the Integrating the Healthcare Enterprise. It's still in a draft form but I think it laid out four boxes that are relevant to the discussion we're going to have. And what I want to try to create for you here is a picture of eMeasure and quality is one aspect of how this system needs to work. But if it's harmonized ontologically we can accomplish a lot more things with that same technology. And Kevin alluded to that too, of being able to get the realtime perspective kind of analytics. And I want to describe how I think that can actually technically happen.

So this model has four boxes. It has -- and this comes right out of the coordination of care NQF framework. We have the patient characteristics defined in ways that are much more expansive than traditional medical explanations. It includes things like
functional status, health literacy, their beliefs and desires, et cetera, their support systems and all of that. You can use those patient characteristics to query and identify. Let's say we have a new diagnosis of diabetes. We know what to do for diabetes. We have a series of rules, we have a series of workflows, and we may have service agreements which is in the NQF concept a relationship that people have within an ACO or a medical home with their collaborating providers. So that we know that when we need diabetic education we can call somebody on this list. So you can use those analytics to create a list of tasks. And those tasks in the NQF model have an accountable entity and they have an expected outcome. Now those tasks could be sequential, they could be hierarchical and but nonetheless you have things at a granular level of task. You then have to manage those tasks and we're not going to talk a lot about
that but computers are very good at managing
tasks and tracking things through the system
and getting feedback and reports. And you can
also use this to incentivize the payment.

And I do want to spend just a
minute on that because we know how I think to
monetize tasks. And the issue is going to be
how much do we pay up front in a risk-adjusted
kind of payment and how much do we pay at the
back end based on the outcome. And also who
do we pay, that's where the accountable entity
becomes important.

So this, the eMeasure and quality
reporting document architecture as you know is
based on QDM, an NQF data asset. But it's
also been modeled in their framework for
clinical decision support and also in the
utilization assessment framework which is a
way of measuring workflows and something that
was designed to address the issue of
attestation. Because CMS did not want
attestation to be the end-all. We wanted
electronic health systems to be able to tell
us exactly what are you doing that's resulting
in meaningful use. That's one of my
recommendations at the end is that we really
need to pull the trigger on that.

I would submit that a similar
ontology can be used in the service
agreements. These are the people I'm going to
call on for these tasks for a whole variety of
other things including reimbursement and
privacy policies, et cetera. It's that common
ontologic approach that I'm trying to push
here today.

So, let's just talk about the
tasks themselves here. You know, tasks really
are the fundamental currency in healthcare and
it's a very simple concept. It's small data
as Kevin said and it contains some key
elements with the accountability and the
outcomes. And of course they can as I
mentioned be sequential or whatever. But the
granularity breaks that complexity down to
measurable and computable entities.

This didn't come out very well.

So, this has to do with tax generation. And again, it's a fairly simple concept about how you take these elements of the patient, including their beliefs and desires, and try to translate those into intentions which is what tasks are. And there's actually a whole computer science area around BDI, beliefs, desires and intentions and how you begin to move from those desires and intentions into a specific task.

So here's a way to kind of conceptualize how ontology can be at the center of a lot of different things so that if you know -- if you want to find somebody with diabetes that's part of what's in the personal characteristics. If you have that you can also find the tasks, the workflows that we usually do for patients with diabetes, you can find the eMeasures that are relevant. You can look at reimbursement policies, et cetera.
And by setting up a framework that's ontologically based like this, no matter where you access from the system you can get to a full set of data assets that you can begin to deploy.

So let me just give you a concrete example here. And if you have an ontologic engine you can do a single query that will bring up all of this information with one fell swoop, not having to do all kinds of lookups and other things in a complex environment. An ontology would allow you to start with a new diagnosis of diabetes and then at the first level you're pulling up all of the -- of a hierarchical tree, an ontologic tree, you may be then pulling up this set of rules that we want to accomplish.

And then because the clinical data is harmonized with these same ontologies you immediately find, you know, here's what I see in the clinical data and here's a gap. You know, something isn't there. And then you
have a workflow that's associated with filling that gap. And that begins to initiate the task. The task has, through a service agreement, somebody you're going to assign it to. So who's accountable for this. And it also has an expected outcome. So that ontologic approach would allow you to see all of this in one fell swoop. And I think that's the power of a system that's modeled on meaning as opposed to a system that's built on use. So I apologize for this but I think the formatting didn't come through here. But the implementation actually, one of the nice things about this model is you don't have to throw the whole thing out in one fell swoop either. You can develop this in a stepwise way. So you can have a team of people that can take the cues from the task list and begin to model that. Nurses and doctors do this today.

You can have them do a pick list
of, you know, these are the things that I want to do in negotiation with the patient and so on. So, I think the implementation can also use existing resources like order sets and CPOE and things like that as its first iteration.

So my recommendations here are that we have a medical ontology model that allows us to link the tasks to all of the related capabilities that we have, and that we encourage the development in electronic systems of modular components that can interact with electronic health records in other systems.

And one of the things that I didn't talk too much about but I think is pretty easy to see, the measure points that you can get in that kind of a model of how coordination occurs and how at the task level we can begin to measure the competencies of individual providers.

I did want to -- I missed one
point I wanted to emphasize which in the
middle column here you can see sort of the
checklist that people go through. And if you
have a high BMI, you know, there's some
choices there. Do you refer people to a
dietician? Does the patient take charge of
this and say I'm going to go to Weight
Watchers? And of course the other thing is
the targets that you want to have that are as
much as you can very clinically oriented. So
that you are really measuring the clinical
tasks.

So that's really all I wanted to
say at this point. Thank you.

DR. LARSEN: Well, those were both
great, kind of in the weeds and in the clouds
which I think most of us have to live in both
of those places a lot.

I don't know how many of you heard
that Amazon may soon start having same-day
delivery. And the question is how did Amazon
get to the point where they can do same-day
delivery when the mail system still takes a week. And to my mind it's very related to what Dave is talking about, is Amazon like other big companies like Walmart have invested in how to get visibility of their process and understand all of the small micro components of their process and then they continually refine it. And they refine and they refine and they refine.

There's not one magic silver bullet that got Amazon to same-day delivery. There was an investment in this kind of a point of view and empowering people at every level of the organization to look at their data on an ongoing way and figuring out how they constantly make stuff better. That's how they get better than the Post Office and get us to same-day delivery of things that you order in the morning arrive at your house in the afternoon through something that's like the mail.

So I'm curious, Dave. How do we
leverage this to achieve the same things that Walmart and Amazon have achieved?

DR. STUMPF: That's an excellent question. And of course you know the way Amazon does that is that they are very good at this task management and delegating those tasks. You know, that same-day delivery is something that Federal Express or UPS or somebody else is going to do and they're held accountable to a standard. And you can measure their competency at doing that and pick the solutions that actually work.

So you know, the nice thing about this is that it does kind of address another issue that I think we all know has to happen and that gets to sort of the top of your competencies, who's going to do this task. And doctors are doing a lot of unnecessary things, nurses are doing a lot of work that's way below their license. And what you want to do is be able to elevate people's roles as high as they can go in the system and use
them, all of their talents and still be able
to measure it. So I think this actually is a
very simple model.

The reaction that many people have
is this is too cookbook. And the way one gets
around that, you notice that little checkbox
that I put in the middle of how this works.
That's where experts are involved.

And there's two kinds of workflow
models out there that work. The one that
everybody knows about is, you know, you go
step A, step B, you branch, go to step C and
so on. And those are very cookbook and they
break all the time in healthcare.

The other model is one that van
der Aalst in the Netherlands proposed called
case-handling. And that methodology is driven
by data so that if you have data you can move
the workflow. And that's what this model
would support.

And a lot of the things that we
heard earlier about well, I want to be called
when the appointment's been made and all of
this stuff, that's really not what you want.
You want to know that you have a trusted
system like Kevin talked about, that airplane,
that it's only telling you when you're too
close to another plane and you need to dive.
It tells you exactly what to do.

And that's where -- this kind of a
system can be driven by data so we know we
have diabetes. The experts and the patient
said I want to do these tasks and those tasks
should run automatically until they run into
a snag, and then you have to ask the expert.
And that's what the van der Aalst methodology
really is. It works well in expert systems
and allows the data to drive things as
rapidly, as far as it can.

MS. NIELSEN: I actually have a
question for Dr. Goldblum. So, entering into
the world of Pioneer ACO. There's going to be
some data-sharing that's going to be required
throughout the organization. What kind of
technology are you using right now? What kind of strategy do you have in place to be able to get through some of these hurdles that we've already discussed today as far as making sure that your systems can talk to other systems?

DR. GOLDBLUM: Yes, that too is an excellent question. I wouldn't even pretend to say that we're beyond the very first step in approaching an answer to that.

Where we've concentrated our attention is kind of in two places. One is making sure that everybody is on the same page from a quality point of view. So it doesn't matter if you're a specialist or a primary care doctor, it doesn't matter if you're on paper or using an EMR. You can look at our population management tool and know how that patient is doing. As Dave said, that's a system that lies on top of all the different EMRs and it keeps everybody on the same page there.

The other thing that we have is we
have a care coordination tool that our nurses use for care coordination. They gather data from the hospital and from the patients and then they distribute it out to the doctors.

So for example, one illustration of that. If the patient has been in the hospital they gather information from the hospital, they talk to the patients, they enter it into the care coordination tool and then they push that out to the primary care doctors in the office.

So as a primary care doctor oftentimes the first that I know that a patient has been in the hospital is when I get information from the Renaissance nurse who has gathered up information from both the patient and the hospital and given it to me. And then I can do what I have to do to make sure that that patient gets in and that we follow up and she has medications in there, et cetera.

So, the two places where we're farthest along is on care coordination,
especially across care transitions and with quality data as I showed.

DR. STUMPF: So I'd like to respond a little bit too. Part of the NQF coordination of care model is that you have a single-source document which is this, you know, longitudinal plan. And when you start to get into it as a few places have, like I think Oregon is down the road farthest on some of this. The HIEs become very important at that point because they're the only ones who can collect data over a broad spectrum. So when you delegate a task out to a community resource of some sort it has to come back through an HIE.

The question is, you know, where is this patient-centered coordination plan, longitudinal plan going to live? It could live in a lot of places. It could live at an HIE level. It could live in a practice where you can access it, you know, anybody who needs to on a need-to-know basis and pull out the
data that they want.

But you do have to I think have a single-source document eventually that is interoperable and why we need a standard like IHE was starting to work on for what this is going to actually look like. And we need a standard framework for how tasks are going to operate as well. And again, there's lots of businesses that have done this very well but we need to get it standardized in healthcare.

DR. LARSEN: I wonder if you might comment a little bit, or anybody in the room that has ideas about this. As I've been thinking and talking to people about what can some comprehensive measures of care coordination be, one of the things that kind of comes around and around again is this person-centered care plan and how good we are at achieving what we've promised or agreed to do.

That would seem to have a lot of validity with patients, it would seem to have
a lot of validity with purchasers and it would seem to encourage the kinds of planning and shared decision-making behaviors we want without prescribing them to the infinite detail.

We would allow the complexity of that discussion and uniqueness of the patients to be reflected, but what we would measure is how good we did at executing against what we promised. And if you have thoughts about how we could cause that to happen both from an infrastructure kind of meaningful use standpoint and a measurement standpoint.

DR. STUMPF: I definitely have some ideas about that. One of the things first of all to point out, there's not a 1-to-1 relationship between a diagnosis and a task here because a task can kill more than one bird so to speak. But you want to be able to then delegate these things out and get the feedback loop. But when you start talking about how you're going to incentivize this,
you know, you're really talking about how you can risk-adjust things because you want to get resources in the right place.

And one of the incentives we have in our current system is that you cherry-pick the easy patients and dump the old ones. With this kind of a system you're really, your physicians and nurses and others, their incentive is to document the complexity and to actually go out and find the tough cases and recruit them and get reimbursed in a way that allows them to generate the resources that they need to actually pull it off. And they have to do it in a collaborative fashion because they can't do it all by themselves.

DR. LARSEN: I think your idea is an excellent one and I think that would be a good measurement of the kind of care coordination you've given and it would be very patient-centered. But I'll be a naysayer for just 5 seconds.

I've been administering a pay-for-
performance program for the last 12 years and just deciding if a blood pressure is under 130/80 or if a glycohemoglobin is less than 7 or less than or equal to 7 or what happens if you have 69.4 percent of your patients at goal versus 69.6 percent of your patients at goal when 70 percent is your target. So, a measure like that is so far away from what we're doing now in the quality world that it's going to take a lot of steps to get there, not that we shouldn't be working there. I think we absolutely should. But even the easiest measures we still struggle with and I'm sure all of you could share 1,000 more stories of trivial little things that you get hung up on every day.

DR. STUMPF: Well, so let me make a retort. I agree with you the way we are today and one of my beefs with PQRS is that it's this aggregate of, you know, 6 to 9, 12 months of data and then you may or may not get a check. If you have this method and you have
-- and you have the tasks being reported out
on a regular basis. We actually piloted this
when I was at United. When you reach your
target you get a check the next week. And
this really puts things down to a very
granular level.

Now, you have to be very careful
about your targets. You know, are we looking
at one blood pressure within the target. Are
we looking for, you know, 10 of them
consistently over a period of time. But when
you define things that way and you then reward
people immediately that's what begins to
change behavior because you have this short
cycle. When you're at the task level you can
get at that.

The other thing that I just
casually mentioned is the ability to measure
the competencies of the people doing it. And
this is going to be important for maintenance
of licensure, maintenance of certification,
hospital credentialing, all sorts of things
that you get these secondary benefits that motivate people. And so you're not just measuring quality. That's one of my main themes is that if we just focus on measurement of quality we miss the boat on what really is going to motivate people. Because they're not that interested in report cards. They are, but you know, there's more to it than that.

DR. LARSEN: We were one of the test sites for the automated PQRS system back, I don't know, 3 or 4 years ago actually. And we built it all in our system and the data was moving along. And 18 months later the finance department got this check. And it took them 2 weeks to figure out what the money was from. And it was from an 18 months in the past automated submission to the PQRS system.

And so the feedback was so disconnected, the financial feedback was so disconnected from the measurement that we had a really hard time figuring out had we done anything right, had we done something wrong,
did we miss opportunities. We just didn't know.

And so one of the things that I'm completely in agreement with you is what we have to figure out is how these feedbacks and incentives are really meaningful to the people doing the work and ideally right in the time that they're doing it. That's not the way to get my organization to change is 18 months later give us a check that we can't figure out where it came from.

So, and believe it or not there are places that are starting to do this. I had the luxury of meeting a CMIO at a hospital in Ottawa who they recruited from industry. And he was really big on this sort of lean process control kind of organizations. And he had done the sort of systems of realtime delivery.

And they brought him in as a CIO to a big health system. And what he started, he had no previous healthcare experience. He
spent his first month just doing observations. And he watched everybody interacting with the health records. And he was horrified at how much wasted energy they had going from device to device to device.

So he developed a strategy that I learned the name of from my niece's school a couple of weeks ago. It's called the One Person/One Device strategy. When her school passed out an iPad to everybody they had a 1-to-1 strategy. And my hospital wouldn't do a 1-to-1 strategy, that didn't make any sense, but to this guy that was really focused on how does he get the most efficient system he can get a 1-to-1 strategy had a gigantic ROI and completely changed the whole organizational point of view and workflows they built because they realized how much more effective they were at getting these tasks accomplished and how much less wasted motion and energy they had from people having to go to fixed devices.

So this re-frames in many ways that whole
point of view about how we use our tools.

DR. STUMPF: Everything I've said today, I would echo what you've said. There are actually, there are people doing what I've said. They're doing it in fragmented ways and pieces of the puzzle, but this is doable. And part of what you want to try to do with this kind of thinking, and this may not be the final thinking, but that you create this overarching vision about where is it we're going here and are we really looking for something that can run on a single device. And that has to be based I think on meaning of data and not just these uses of data.

DR. GOLDBLUM: You know, you had a problem, Kevin, that we wish we would have had. We did all the same work that you did and 18 months later we weren't wondering where it came from but why it wasn't there.

(Laughter)

DR. GOLDBLUM: So if you want to talk about motivation and de-motivation
there's an example of that.

But on a more positive note I think one of the things that we've done at Renaissance is we've made the rewards very well-connected to the behaviors. And that's how we've managed to get doctors interested in quality improvement and population management. I think we doctors are kind of notoriously known for not wanting to change and not wanting to be graded or judged. But we gradually changed the culture in the way the doctors think.

And I think that's almost as important if not more important than the actual development of the quality measures. You need to have an effective measure that people agree with is good care. But once you have that you need to make sure that the doctors have the motivation and the tools to be able to respond to it. That's what we've worked on with our population management tool is giving them the tool. And then we've done
a lot of educational things to make sure that
we give them the cultural changes so that they
want to succeed in this rather than just
taking care of individual patients.

MS. NIELSEN: That actually raises
a really important point which is motivating
individuals to get the data into the system
which is the key. Because all of these
eMeasures are only going to be feasible if the
data is in the system.

And so could you talk a little bit
about that actual concept as far as what are
the things that you've been able to succeed to
not only assist with the data entry but have
there been challenges like fatigue alert that
you've had to deal with?

The reason I bring this up is
because I was hearing from one organization
that created some rules engines to go ahead
and to really focus on just some core
measures. And the core measures had to
unfortunately do with a lot of alerts that got
pushed out to the clinicians. And what ended up happening is that instead of actually doing a great job encouraging the data entry, the opposite happened. So I'm just wondering if you could speak to that.

DR. GOLDBLUM: Yes, fatigue alert is a real problem. In fact, you're looking at me and I have a terminal case of fatigue alert. I am horrible with ignoring my EMRs warnings. It slows me down and I'm embarrassed to stand up here and admit this but it's true. And it is a real-world problem.

Our population management tool we try to populate as much as we can without a person having to do anything. So we have our EMR do the upload of data and obviously work has to be done to get things into the EMR in the first place as I just spent 15 minutes talking about. But once it's there thankfully it can be uploaded.

We collect as much data as we
possibly can directly from laboratories. We also collect it from claims as well. So our manual data entry is kept to a minimum.

At the practice level with all the workarounds we have there's still a lot of work that has to be done in making sure the data gets in there and it gets in there in the right form. And again it's a matter of giving people rewards and feedback on the job that they're doing. I think it's like any other employer/employee relationship, you know, you have to tell people what their job is. You have to give them feedback on how they're doing it. They have to understand that it has some meaning.

But one of the things that we've been successful again at Renaissance in doing is getting our offices -- and again, this is part of PCMH as well -- but getting our offices to work as teams. And it's not that hard to get front staff people to work as teams but it's hard to get doctors to work as
teams.

And one of the things that's helped us is that this job is a large job and doctors can't do it all by themselves. You may be able to do it when you first get started but as you move on when you're doing good quality improvement and population management it's a lot of work. So we've encouraged delegation and sharing of work and responsibilities. And everybody kind of feels like they have a part and data collection and getting it in there in an accurate way where it can be searched is part of it.

DR. LARSEN: This is something I'm actually pretty passionate about, surprise, surprise.

Data gets better through use, it's pretty well known. So the more that we have data in constant feedback loops with lots of people who need it and count on it and can see it they'll get it better if you give them the right tools and the ability to get it better
all the way through.

If you do whatever you're going to do and then 3 months later you have some data geek scrub it all and normalize it and never give any feedback loops back to your home system nothing's going to get better. You're just going to keep creating garbage and someone at the back end you're going to pay a lot of money to try to make some better sense of it.

So you have to find all these micro feedback loops at the front end and that align people's motivation that if they do it right the first time when the patient comes back the second time it's better. And when everybody else is doing it it gets better and the whole thing becomes a positive feedback loop of goodness. Of virtue.

And then the decision support world actually has a really nice literature that is not very well leveraged. There are some best practices around decision support
and most of us treat decision support alerts with the receiver operating curve. They have a false positive rate, a false negative rate and then they have an intervention, how effective were they as an intervention.

And you can actually do randomized trials on decision support where you randomize people to get an alert or don't get an alert and you can see if it changed behavior. And so the best places do that and they only actually use alerts that change behavior. Because if they don't change behavior no matter how smart you think you are for creating something cool that will really work it didn't, so get rid of it. It didn't work, it was a tool that wasn't effective, you proved it in your little tiny, randomized trial. Out.

You also have to constantly monitor them because they break, and they break for a few reasons. They break because people fatigue of them. So the popup ad you
got on your Gmail page you responded to the
first couple of times but you get immune to
it. It's the same way with these kind of
alerts in our systems.

But also the underlying
architecture of the alerts breaks because the
NDC codes change and all sorts of other things
change in the system. So, most of the problem
at least in my mind with alert fatigue isn't
about the providers, it's about the systems
and the alerts.

And we have to really re-frame our
thinking that we want people to be part of
this virtuous cycle of having motivations to
get the data right and having systems that
support them getting the data right and not
forcing them with things that we think are
good forcing functions because the forcing
functions typically prove to not work.

DR. STUMPF: So I'd like to pick
up on that because I agree with it. Part of
the problem and one of the barriers to
implementing all of this stuff is the need for
a lot more professional curation of data
assets.

And you know, I remember, I see
them at the back of the room. The PCPI and
their work with Cardio-HIT in the early days
showed, you know, a lot of the problems that
existed with the data that was going into an
EHR and couldn't -- or wasn't going in really,
and how do you get that standardized.

So, it's really apparent that
right now a lot of the frustration with
electronic environments is we have to
customize everything. But the customization
is usually based on specific use cases. And
the way you're going to get curated material
I think is through professional societies
because the only way that you can do this is
with professionals. So it's got to be nursing
professionals and pharmacists and physicians
who are curating.

And we do this with -- eMeasure is
a good example of a curated system. It's just
very cumbersome right now and it's also too
narrowly focused because at the same time
we're doing the eMeasure we ought to be
thinking about the data templates that need to
plug into the EHR. And we ought to be
thinking about what workflow is going to be
activated that's going to resolve that gap in
care.

So when you think about this
overarching framework you can begin at the
time you're developing the rule is if that's
where you're coming from you can also develop
the other components that are necessary for
it.

Now, there's other people are
going to come at it from another angle, but
they need to be able to consider well, I've
got to have rules to do this.

DR. LARSEN: We'll open it up to
some audience questions.

DR. PALEN: This really resonates
with me, this architectural plan. And within Kaiser in Colorado we have, as you can imagine, population management tools and disease state management tools. And we have this thing called gap report. And Samer showed one of those gap reports on the slide presentation he did earlier, you know, what was the regional average, where's our goal, and how are you doing.

And what we've found in being able to do these gap reports is that there's still a lot of manual effort. I mean, we have data sources from, as you can imagine, from a lot of places, even external data sources.

Kaiser in Colorado does not own our own hospitals. Some of you may be familiar about Kaisers in California, they own everything. But in Colorado we contract with several hospital systems. So we have to get data feeds from them. I mean, we don't own their EMR stuff so we have to get data feeds from them. Even with all those data feeds
coming in, and I look at your center slide there and all those arrows, the impact on all those arrows. Well, those feed our disease state management programs to produce the gap reports.

An example is diabetes. So, we can develop a super set of patients that are diabetics but guess what. When you actually have manual effort and have a clinical eye, well, 20 percent of them really aren't diabetics. And so then when you start having these patient-centered coordination plan you better make sure that you're coordinating with somebody that really is a diabetic and not some spurious result.

So that's a huge challenge of being able to find out, okay, well the system, going back to your airplane thing, well we're going down. Well, are we really going down? Is that really a diabetic or not? It's that validation of that data that's so important.

DR. STUMPF: You need the
clinician in there right at the beginning when you start to go from the data to a task implementation. Without the clinician in there it fails.

DR. LARSEN: So a funny story about my old hospital. I hired a medical director of documentation quality and her whole job is to make sure that she has her eyes on every place where documentation needs to happen, and it needs to be good and reliable and accurate, and has a sort of single strategy and framework.

And she worked a lot with our HIM department and a very good working relationship. She got to this point where she realized she thinks clinicians should be reviewing the DRG codes that leave the organization. And that was hugely threatening to our coders because the coders had a very strong professional point of view that they had their own way of assigning these diagnoses. And she as a physician was sort of
shocked that it would be such a threat that there would be a clinical secondary review of coders' codes. And it was a sort of cultural thing we had to figure out within the organization.

And I think we still work in all of these silos, these professional silos. And some of the reason our data is wrong is not because it's wrong, it's because it's created for a different reason and a different point of view and we haven't normalized our thoughts and we haven't figured out well, this is the coder definition of diabetes and that can live as its own thing. This is what the clinicians think diabetes is and that will live as its own thing. So we have to figure out how to work together and all play in the same data.

MS. NIELSEN: And from an eMeasures standpoint though the question is where are we going to get the data and which definition is the one we use. Is it the coders' definition of diabetes or is it the
clinicians' definition of diabetes which is a real important fact that we have to look at.

DR. STUMPF: I want to speak about the issue of what -- NQF called them collaborators in the healthcare system as opposed to consultants and other people. The idea is you're creating a team here.

And it's not quite clear there what a service agreement is but it has two major objectives. One of them is to get access to care so that you, when you break your arm you don't end up in the ED, you end up in either an orthopedist's office or in a primary care office that knows how to deal with a fractured arm.

The other major function of it is getting the appropriate care. So if you're referred to an orthopedist you don't get an operation the first few weeks.

Now what happened, and this was not something we pulled out of the air. It was something we looked where best practices
were and those happened to be in New England.
And the dynamics between providers changes
with that kind of an environment. So you can
imagine an orthopedist who's going to get a
certain amount of money for every fractured
forearm.

Their incentive now is to teach
their primary care doctors how to set a
fracture which many of them don't know how to
do, and maybe even to make their cast guy
available to put it on. But they don't
actually have to see the patient. And what
you saw was a lot more collaboration occurring
between these providers without actually
seeing the patient. You know, if you have a
tough one just give me a call.

Nowadays you can't get reimbursed
if you're an orthopedist and you're taking a
phone call. You've got to have the patient in
your office. And that's one of the
shortcomings and what the service agreements
can begin to address, that we're going to
reimburse you for helping us coordinate this care.

MS. TAYLOR: Hi, I'm Lisa Taylor from the American Health Information Management Association. And I'm -- after those last comments about coding I think I need to go run and sit down.

(Laughter)

MS. TAYLOR: But I'm not up here to address coding. I wanted to thank you for your query framework that you showed, the ontological query framework because it crystallized a thought that I have been formulating listening to people from different sectors in the healthcare industry today.

Health information management started as medical records in 1928 because criteria needed to be set for the medical record. And I think we have some lessons to learn from the historical development which is criteria were set. Authoritative bodies said this has to happen. Facilities developed
their own way of doing things until a criteria
that was required by an authoritative body
said no, you need to do it this way.

So right now we're in this turn
things upside down. I am not in IT but
everybody tells me in IT you do not just
automate the system the way it is, you've got
to look at what you're doing. And you are not
going to have just a workflow that follows the
way it used to because then you don't harness
the power of the computerization. So, I think
your ontological query showed that very
clearly.

And one of the things that I have
noticed in our discussions today is there's
been a lot of discussion about who does what.
Who's responsible for what data. Who's
accountable for what actions. That
ontological framework showed that clearly.

And we need to realize that we are
going to have to readdress the information
governance and the data governance of EHRs.
And that's what we're struggling with here today. Who's going to do what, who's accountable for what. Thank you. And we can talk about coding another day.

DR. STUMPF: Coding is very important. One of the accountable entities, by the way, here is an electronic system. I don't think I mentioned that. But you know, they have trigger events and you have to hold them accountable for the alerts or the bad alerts or the good alerts and other things. So they have an accountability here as well.

DR. LARSEN: Your point is very well taken. And I think one of the things that we don't recognize in the eMeasure world enough is that coding is very consistent because we have good processes to make sure that it is. Our coders were really well trained and they had a very clear point of view. They did inter-rater reliability checking, they did double-checking. The consistency of coded diagnoses is way more
consistent coder to coder than clinicians.

So, clinical studies -- I used to teach about chest pain. Clinical studies, when you bring doctors the same cases doctors have horrible inter-rater reliability about what their definition is of disease or naming of disease. And so part of the variance in the eMeasures is not just about variance in the systems and the data, it's variance in doctors' point of view about what they call something. And we have not done the same work with doctors to achieve inter-rater reliability as we've done with coders to achieve inter-rater reliability.

And so we're dealing with a fundamentally different kind of information. And the question is do we cause there to be less inter-rater -- to be greater inter-rater reliability with doctors, or do we live with this sort of landscape of more variance and figure out how to measure more variance because we've got more sophisticated tools.
I'm actually in the second camp. I don't think we should over-prescribe the sort of variability there is, but we need to leverage 21st century analysis to be able to provide visibility into what that looks like so we can provide it as feedback back to those providers and say hey, Dr. Smith, do you know that you have only 30 percent concordance with the rest of your group in how you diagnose Grave's disease. Well, that's really interesting feedback for Dr. Smith and that would be a new way to start to normalize healthcare but it's a more -- it's a way that's kind of socially acceptable for most of the professionals that are there. It becomes professional development.

DR. GOLDBLUM: Doctors are trained to take action so I can just hear somebody saying in response to what you just said, Kevin, well you can call it whatever you want, but you know, here's what we have to do for this particular patient. So it's really a
matters of changing the professional's minds.
And I agree with what you said, I think you're probably going to find another way around it than getting doctors to agree on what they call different things.

DR. BURSTIN: Hi, I'm Helen Burstin. I'm the senior vice president for performance measures here at NQF.

I'm having a little bit of measure development deja-vu back to the old days. So, I guess we had this thought that we would move towards EHRs and some of these issues around data quality would be diminished.

And I think what we're hearing here is there probably needs to be a clear set of checks and balances in EHRs just as much as there were when we built claims-based measures. I mean, there's a reason some of those claims-based measures had at least two visits in a given year, or perhaps also a medication for that given condition on a medication list.
So I'm actually not comfortable with the idea that we need to train docs and other clinicians to better code their problems. I think we have to actually use the technology and think through what are the right set of checks and balances using the data that's coded and structured or perhaps, you know, NLP to actually see where's actually truly a diagnoses there.

But at the end of the day there needs to be some hierarchy we expect of what the data quality is. So if you're pulling the diagnosis from coded problems from a visit that the clinician didn't personally say this was the visit today then I have less confidence. If I at least in my old EHR saw a patient with diabetes I was then triggered to say in addition to the billing code is this a problem you want to put on your problem list.

So I think there's got to be something really thoughtful about the way the
data quality is expected even from EHRs. And I think there's a lot of work to be done.

MS. NIELSEN: Absolutely. And if I could just tag onto that. You know, when we start looking at some of the technology moving forward, right, whether it's IBM's Watson or some of the natural language processing technology that's out there we have a decision to make overall. It gets back to variance. How much variance are we going to accept?

So a computer isn't perfect. We have to tell the computer what to do, right? And so -- in fact, can I just give you a great analogy? It's used a lot. But if you were to write down the instructions of how to make a peanut butter and jelly sandwich I bet you that you would leave off some pretty key steps if you were going to go ahead and turn that into code to have the computer make the same peanut butter and jelly sandwich. For instance, you can't just say put the peanut butter on the bread. The
computer is going to put the jar of peanut butter on the piece of bread. Oh, wait a second, is that a slice of bread or is that the loaf of bread, right? And so these are the nuances that we have to train or teach the computer to look for. But in natural language processing we're going to have to make a decision here. It can be done. A lot of this extra stuff can be done. You, computer, go find it.

Now, the question then becomes we can build a user interface so that you have a person at the computer saying okay, yes computer, you were correct, or no, you weren't. Now that's additional resources, that's additional time but that reduces variance; that improves data quality.

Or do we want to say you know, let's just let the computer do that. We're going to live with a certain amount of variance. But will it reduce some of our overall resource constraints that is getting
to be more and more of an issue?

Because let's face it, every piece of data has a cost associated with it. There is a cost associated with every single data element. And some data elements are a lot cheaper than others. And so we in a way here are also talking about the overall cost of healthcare, right? Because if we go ahead and start thinking about how much it's going to cost for all of those data elements to be captured with different variances of cost, right, then we can go ahead and look and say okay, is the cost of that measure with all those data elements, is that the cost we want to put forward for that data and is that the right thing to do.

DR. LARSEN: I agree although what I would say is look at Walmart. So, Walmart is one of the biggest consumers of data in the entire world. They also have one of the lowest costs per unit volume or unit of delivery you can imagine. So there's a way
between those two things where you get lots of
data but you figure out how you leverage your
low-cost data in consistent, reliable ways and
you can then actually really drive efficiency.

MS. NIELSEN: Exactly, and that's
just it. Looking at how do we leverage the
data that's there strategically without
compromising the quality. I think we're
talking -- go ahead.

DR. STUMPF: I'd like to echo one
of Helen's points though. I think one of the
things you were enunciating which I agree with
is that we have to be able to hold the EHRs
accountable for doing certain things. And
that's why the whole QDM was developed
originally in that utilization framework so
that we can actually see what they're doing
and get better audit logs and better
understanding of the triggers for where the
decisions are going.

And the analogy I like to use is
you can't sell a car in Illinois where I live
if it doesn't have taillights. And you know,
there's certain things that an EHR has to
have. And you know, certification is not
enough. To just say that you can deliver a
one-time CCD message doesn't tell you that it
can process a certain workflow and that we can
measure that workflow and figure out what it
actually did.

MS. SPIRO: Yes, Shelly Spiro from
the Pharmacy HIT Collaborative.

One of the things I haven't heard
today that I'd like to hear more from the
panel on is really harmonization of the
eMeasures or the quality measures across
different practice settings. Whether it's
long-term post-acute care, whether it's
pharmacy, whether it's lab, how do we actually
come up with common types of eMeasures that
really are more patient-focused? Because what
I'm collecting out of my pharmacist EHR might
be different than what you're collecting out
of an EHR in a hospital.
And what -- and I guess to Kevin too, what is CMS doing? Because most of us are being driven by the regulatory requirements of the larger payers. So can you talk about that harmonization of some of the measures?

DR. LARSEN: Sure.

DR. STUMPF: Can I just make one comment?

DR. LARSEN: Go ahead, yes.

DR. STUMPF: One of the comments that was made earlier really hit me and that is if you have, you know, you're an internist and you're responsible for the blood pressure. You know, that when we have those kind of tasks of managing blood pressure everybody in the system ought to be accountable for that to some extent. And I think that's what you're getting at.

So that when you're in a retail clinic at a pharmacy they're taking a blood pressure. That needs to get in the system.
When you go see your specialist they take a blood pressure. And that all gets back to the internist who's managing that. They're accountable for it but they have a team of people who are feeding data.

And I think that's what you're driving at. It begins to get a much broader constituency focused on these goals even though they're not the actual accountable one.

And then you as a pharmacist, you have certain responsibilities about medication adherence but you can't do it without the doctor and without the other people who are, you know, engaged.

MS. SPIRO: But the goals have to be focused on the patient.

DR. STUMPF: Yes, that's right.

DR. LARSEN: So I'll channel my colleagues at CMS who articulate this I think the best. So Patrick Conway and Kate Goodrich and others at OCSQ, some of whom are in the back of the room.
The National Quality Strategy was actually created to give an overarching framework for how we can start to align all of the quality initiatives not just of the government but of the country, and not just the measurement initiatives but also the other kinds of investment in initiatives. It really helps us frame the meaningful use program, for example. So that has created a certain set of tasks that we are now engaged upon as HHS.

Some of those tasks are actually trying to align programs. So we know that if programs can be aligned that really helps. So if you read the proposed rule for PQRS and Kim Schwartz is here from the PQRS program, that proposed rule suggests that it would align to the meaningful use eligible provider program.

And I've heard Patrick Conway articulate a goal of measure once so that measurement would happen one time across public and private and other kind of contracted payers and that one-time
measurement could then have a way to be used across all those places.

We also at HHS are in the process of cataloging by kind of category and condition all the measures across all the HHS agencies. And then I sit on a council where we prioritize and choose the focused core of those that we are going to really use and then figure out which ones we can retire across the Agency.

We then think about those measures in a sort of context and the slide that we use is a kind of slide of boxes that sit on top of each other. And so the measures are related but may not be exactly the same. They have a sort of roll-up/drill-down process. So they'll drill down to the provider, up to the group or ACO and then up to the community. And ideally we want the same measure to be measured across.

And I think a really interesting example, and when I was talking to one of my
colleagues who leads a large HIV program,
you're now starting to measure viral load of
a community. What an interesting thought that
now you're not just measuring who's in your
practice but in your city what is the viral
load.

And so that relates to what your
practice is and that relates to what your
group is but it also relates to a public
health goal and it helps to make those things
all get aligned. So we are absolutely working
in those directions and we need your help.

DR. STUMPF: Yes, that's an
excellent point. I mean, I, as a neurologist
there's some things that come in epidemics,
you know, like Bell's palsy. You see 1, you
know you're going to see 10 of them. And to
be able to have that, you know, recognize that
very early on really helps you with clinical
management. You're not running around doing
a lot of irrelevant things when you know
there's Bell's palsy or Sydenham's chorea is
another example of things that come in spurts.

So, that was the first thing I usually do when I first started seeing Bell's palsy that I'd call up a couple of colleagues and say have you been seeing this. And it's much easier to manage those problems if you have those public health tracking systems in place.

MS. NIELSEN: Yes, there's actually an initiative and several individuals over at Hopkins, Johns Hopkins is actually involved in looking at all of these different public health data sets. And how do we look at making them meaningful at the point of care. So there's a lot of exciting energy going on about that.

And just kind of a follow-up. Kate Goodrich was at the very first eMeasure Learning Collaborative meeting here in April and she did a really nice job talking about where CMS is going as far as harmonization. And I believe that is archived on the NQF website. So you could actually go and not
only get her slides but you can also listen to
her presentation from April.

   DR. LARSEN: We're getting the
timeout signal from the back of the room. So
I thank you all very much. Thank our
panelists.

   (Applause)

   MS. FRANKLIN: So we'll take a 15-
minute break, maybe a 14-minute break. If you
could be back at 25 of and we will -- we have
one more very short panel and then we're going
to do a wrap-up and have you out of here by
3:30. Thanks.

   (Whereupon, the above-entitled
matter went off the record at 2:21 p.m. and
resumed at 2:37 p.m.)

   MS. FRANKLIN: So we're going to
go ahead and start the last session or the
last segment of our day. So, if everyone
could have a seat.

   So the last part of our meeting
today, we're going to do about a 15-minute
1 panel and have a couple of measure developers
talk about the measure development process.
We think that will be somewhat hopefully
enlightening. And Dr. Butt is going to
moderate this. As I said about 15 minutes and
then we're going to do a closing session with
some remarks and some next steps. And then
we'll let you go.

   DR. BUTT: Okay, so this session
is actually a panel and we are very fortunate
to have a couple of the measure developers
join us. And Sharon Hibay is going to
introduce herself and has a brief
presentation. And Ann Watt is from the Joint
Commission. She's going to join her.

   And after their -- but then the
idea is that after the measure developer
presentation for 15 minutes we will ask some
of the other panel members to come up here.
Those who can find chairs can sit here. I'll
actually, I can probably stand, and then
others if they want to join us up front here
that would be fine too. But I have a few
slides that I think would be good to sort of
try to do a wrap-up session and hopefully be
done by 3:30 so those who have to catch
planes, trains or buses can be on their way.

With that said is this yours?

Okay, take it away.

MS. HIBAY: Good afternoon,
everyone. Can you hear me okay? Okay, I see
nodding in the back.

My name is Sharon Hibay. I work
with Quality Insights of Pennsylvania. We are
contracted with CMS to develop select measures
for the Physician Quality Reporting System and
they are utilized amongst numerous other CMS
programs -- measure programs.

What I'm going to do is just kind
of do a couple of things which is talk a
little bit about what is measure development,
how is QIP, Quality Insights in this eMeasure
development world, and then talk a little bit
more about so what is eMeasure development as
opposed to just measure development itself.

In 2006 Quality Insights began our journey of doing measure development with what was going to be some sort of ambulatory voluntary quality measure reporting program that eventually became PQRI and then now PQRS. We have developed up to 35 clinical quality measures for various different programs including one which was in Meaningful Use 1, our BMI measure. And we have six measures for Meaningful Use 2.

A little bit about where we are in this eMeasure space as an organization. Again we are contracted to develop measures for PQRS and so once we started getting into this eMeasure world some of the measures that we had already worked on and were -- had developed and were maintaining for PQRS in the claims and registry reporting options. We just moved over into that eMeasure development space. We have developed and tested a number of measures as I've said.
We are part of the eMIG group which is a group of ONC, NQF, CMS, a bunch of different measure developers. I think Ann, you sit on eMIG with me also. Lots of great contractors. And we all kind of look at this process and say where are we with the QDM, the measure authoring tool. And we utilize -- I have in quotes from our perspective some work with the blueprint which is HHS's guideline to how we develop measures for HHS measure reporting. I think we kind of set some standardization and policy work there.

I think it's a group that I would say is at least 100 feet up although sometimes we do go down into the weeds a bit. I think one of the most fun conversations we had on eMIG was about a 45-minute long discussion of the word "during" and how you can define the word "during" and how many different and special ways, so special, that word can be defined.

Once you recognize the minutiae
that is what is eMeasure development. I have somebody who works for my team who asked me once when do we get out of the weeds, Sharon. And I said -- with this eMeasure development stuff. And it was a bit prophetic. I said well, when you don't work in this job anymore. (Laughter)

MS. HIBAY: It gets worse. She left 3 months later. (Laughter)

MS. HIBAY: Sorry, sorry. So it's a very interesting role we do and I think eMIG's a really great example.

We live this bimodal role with CMS. We do the measure development but then we also do program support. So I often tell people who are trying to sign onto my team well you know, you have to be able to do what I affectionately call the commando crawl. You know, you've got to love the weeds. You can't just go to touch the weeds, you have to be one with the weeds, okay?
And then from there, you know, you've got to be able to jump back up. And you have to understand how the weeds are interconnected. And not just connected to the eMeasure world but then you've got to be able to step back to that clinical world of where are you getting the source information from your clinical practice guidelines, all your evidence, all that really good stuff. But then understand -- and so, oh by the way, what's it like in the real world and what does this mean to the whatever setting and providers and all of that stuff where this measure would be utilized. So okay, so that's my little happy thing on eMIG.

We are part of -- I've been part of the eMeasure Learning Collaborative and I thank everyone for allowing me to participate with that. This has been a really exciting opportunity.

We have done some work, lots of work with the measure authoring tool. And for
awhile we were doing weekly meetings just on
so what is this logic, what are your examples,
how are you developing. That's been really,
really great because we had an opportunity to
work with other measure developers and kind of
collaborate.

We did some NLM and Mitre value
set and logic reviews. That's still going on.
I think -- cross your fingers for me. I think
it was done a couple of days ago. I'm not
totally certain though.

And let's see, lots and lots and
lots of value set training. As an
organization we really stepped into the SNOMED
world kind of right up front. So we did some
real intensive training with that. We jumped
onboard with ICD-10 and had our measures done
pretty quick I think. I'll give kudos to Kim
Schwartz because she really pushed PQRS to be
really a forerunner in the ICD-10 conversion,
LOINC, RxNorm, HL7, yada yada.

We also put forward some new
concepts with NLM with SNOMED and such for our measures. Because you know, you're really looking when you're developing an eMeasure, you really need to know down to such level of specificity and detail whether or not some sort of clinical concept is within an EHR, reportable within an EHR. And sometimes it's not so sometimes you have to, you know, apply for new ones. And we did a pretty good job with that.

We've met with wonderful professionals and actually some in the room here today. And also some vendors, again, some in the room today with our eMeasure testing. And we also are very extensively involved in our organization with the Regional Extension Center work which allows us to really understand meaningful use, attested EHR providers, all that good stuff, so we can understand what it's really like out there in kind of the real world. And then we did alpha and beta testing. That was fun. Okay.
So just in general this is the measure development. So not even living in the land of the e-world yet. This is the measure development process.

So first you start off with some sort of a gap analysis. And that could be based on a clinical gap or a measures gap. And you do some sort of clinical quality measure identification and selection up front.

You'll -- also, some of this stuff kind of goes in tandem. You're also going to be looking at an environmental scan literature review. You're looking for where are we in the world with what is the most clinically relevant and current information based upon setting, based upon provider. You're looking for importance. All those good things that you look for with your NQF endorsement. We kind of like seek all that information right up front, benchmarking performance, all of that.

You're also convening a technical
expert panel of people who want to talk about
this and help us develop a measure and again
understand what it's like in the real world.
So again that relevance, clinical currency.

You have to develop a

specification. So you've got your title,
description, denominator, numerator,
exclusion, exception. That whole space about
exceptions is new over the last year. We've
really kind of teased out the difference
between an exclusion and exception. I think
it took everyone in this process a good 2-3
months to really absorb the difference there.

And again, alpha testing is really
kind of -- I'll talk a little bit more about
that. You know, are data elements available
or is the concept available, are coding things
available for you. You have to be involved
with getting your public and stakeholders to
give input on what you're developing. You
can't develop it in a silo. You really want
to hear comments about what's going on.
If you choose your measures go into a call for measures process and then if they are selected they will go through a program implementation. And then you'll go through some reliability beta testing and that also includes validity testing. And then you walk through that very easy and very quick process of NQF endorsement.

(Laughter)

MS. HIBAY: Heidi, if you're here.

So, okay.

So just in general this is not my last piece of data. I actually heard this I believe at one of the NQF webinars. So I just want to put that out for public consumption there. It takes an average -- this part I do know -- of 2 to 3 years from measure concept to getting it into implementation and endorsement, okay? And it costs about $125,000, $150,000 per measure to develop.

We have to be really selective about those measures we choose to want to put
into the measure inventory. That's why wonderful things such as National Quality Strategy and all of these other harmonization gap analyses that are out there right now can help drive where do we want to most effectively develop measures.

The next piece and I'll try to now sneak over a little bit more now into the eMeasure development. So the de novo versus the retooled clinical quality measures.

So that whole wonderful process we just talked about for de novo measures, you still have to do that. And then now you have to kind of convert that over into how is this measure going to be reportable through an EHR. So you're going to start with that measure development cycle I just spoke about.

You have to develop some sort of conceptual framework or calculation algorithm. I think we would do that with both measure sets. And you have to develop some sort of measure logic.
This process, we all became in the last I'd say 6-8 months excessively familiar with what is the measure authoring tool. We were building a product and building measures at the same time. So we were baiting this process as we were developing measures.

I think this is not unheard of to say this. In the beginning of the process we were doing this in a bunch of little silos and really wanted the silos busted down so we could all kind of learn collectively. Probably the second half of this process we got a little bit better at that. And then my own editorial on that is I think that our collective learning -- I'm looking for Kendra to give me a bobble-head nod yes -- I think our collective learning, just our learning process in general became much better.

Again, that funny that hat we wear, that bimodal hat of developing measures and program support. Someone would ask a question on a call about a measure and I would
say oh, first of all, the thing was like oh
God, don't let it be my measure. That was the
first thing.

(Laughter)

MS. HIBAY: The second thing was
okay, but does that pertain to my measure.
Okay, and does that pertain to any of my other
measures. And what does it mean to the
program in general. And do we need to ask
questions. And you know, always trying to get
my team to always kind of take a step back and
say yes, if it's not one of our six measures
we still have an obligation to the program to
say how is it we can continue to build this
process and collectively share information
amongst people.

And I think we all as a group in
general -- we all got so much better at this
process in the last I'd say 2 months
specifically. There was lots of coding and
value set development. I heard someone say
this morning there was the difference between
transitional and the standard set. So you
know, HIT Standards Committee asked us to
really say these are going to be our standard
sets moving forward. You know, that's the
SNOMED and the LOINC and RxNorm, all that
happy stuff.

But you know, that's not where we
are right now. So if we want those measures
to be developed and utilized now we have to
also include the CPTs, the ICD-9, the ICD-10,
all of those pieces, the HCPCS. And so you
almost had to develop two different measures
and make sure that hopefully you had value
sets in both worlds. And then we had to do
alpha and beta eMeasure testing which again we
were building what the heck is this testing
anyway as we were all trying to test it.

And my last thing is we had to
collaborate. And in the beginning that was
really hard to play in the sandbox a little
bit. Or I wouldn't say hard, I would say
quiet in the sandbox. But we got a whole lot
better at it.

Retooled just means you start off with a clinical concept or a measure that's already out there and then this one's actually a little bit harder because you have to try to figure out how to develop logic and find value sets that may or may not be out into the world. So some of the problems that we ended up having, you know, we had input or calculation constraints of the current process. You know, how is it you can find information or gather information from multiple different care settings. That might be inpatient versus outpatient and that became a little bit challenging.

We had one of our measures that we had to completely redefine because the measure authoring tool, the logic that was out there didn't allow us for multiple lookbacks, and we wanted multiple lookbacks within one measure. So we're just not there yet. So how is it we develop measures that we can look at that
Availability and specificity of different values or coding sets. I talked about some of the work we had to do with SNOMED and looking for that.

The other piece that's really, really important is that so much of the source measures involve a human component. I know I did it, here's my attestation, I check the box and I move forward. That's not where you are in the eMeasure world. You can't make an assumption.

The idea -- this is one of my favorite things -- is that we talked about when I first jumped into this eMeasure world you don't worry about it. What's going to happen is these measures are going to be developed, then they're going to be implemented and seamlessly behind the scenes they will be reported and that the provider will never know it. Well, providers always know it, they always want to know where they
know it. They want to see it in the EHR. So that was another piece of some of the stuff we learned.

So, we did some alpha testing. So feasibility, are data elements present in an EHR or could they be easily added. Are they structured, are they free text. Usability. You know, that's that whole workflow space. How many -- what did someone say? They said it a couple of times, 1,000 clicks to death or something. Death by 1,000 clicks. I'll remember that. Okay. So you know, all of those pieces. You know, are we making it hard for the providers to go through millions of screens. That's kind of, you know. Are value sets, you know, transitional or are they standard and what do we have to do about that. Beta testing really speaks to validity. Are the concepts, is it logic, is it really -- is it there that is really representing the clinical concepts of what the measure specification said.
And then reliability speaks to the reproducibility and the consistency of calculating the measure again and again. Is it measuring what you want, all that good stuff.

Next steps for us and our process. And I really shouldn't necessarily have titled this next steps. This is kind of what we're living now and then also next steps. So we're in coding and value set review and I really thought we were done in the beginning of September and then someone did something again last week where we had to go through them again.

And then the measure calculation logic review, that's never ended. If you get an email from Saul Kravitz you're like oh God. (Laughter)

MS. HIBAY: And that happened again 2 days ago. So then testing scenario, development, execution. So we're going to get to a space where we have to test our measures,
right? So we're kind of looking at if we're
doing ONC certification test cases are we also
looking at some other, you know, just
generally we're developing test cases also.
We're calling them implementation test cases.
Just are we in the ballpark at all with
reliability of the measures. ONC
certification will be a whole lot more
involved we anticipate.

You know, we in our process of not
consistently necessarily defining the alpha
and beta testing similar to what other measure
developers or eMeasure developers were doing,
we immediately right up front engage some very
fabulous providers and EHR vendors and we're
very thankful for their work in this process
but that is the absolute tiniest of toes stuck
in the water of where we need to go with this
process.

Every EHR is different. We're
looking at this measure authoring tool and
then the human readable and all that good
stuff. And that's one way of looking at it.

We have to look at the QDRA.

We also talked to another organization that just ships all their data out and they do some sort of analysis based upon warehouse data scrubbing which is a whole new process. There's so much that's out there. Don't quote me but I think the latest list of versioning EHRs that have received ONC certification, so that means like if you have an Allscripts product every single time you got an update the list is over 22,000 long. How is it we're going to develop measures that can be utilized by all these systems? We've got a lot of work to do. It's a lot of work to do.

So, eventually these measures are going to be implemented. I've got a 5-minute warning. And then we'll also have to be out there doing stakeholder input again.

Some lessons learned is that accountability factor. I kind of talked about
that earlier. Providers want to know very
strongly where it is and what it is you're
going to be reporting about them and their
measures.

You know, when we looked at a
bunch of EHRs and I see a little checkbox at
the top lefthand corner and right behind it it
says medication reconciliation. You know,
that's clearly someone reporting a clinical
quality measure. And you can see those things
embedded throughout numerous EHRs.

Collaboration between everyone is
needed. And the more eyes on your product the
better, on your eMeasure the better because
we're just in the infancy right now and so
more questions people can ask, that'll be most
helpful. Any questions?

DR. BUTT: Well, you had 3 more
minutes left.

MS. WATT: Good afternoon,
everybody. Thanks for having me here. I'm
going to be fast, I promise.
I'm Ann Watt. I'm an associate director in the Department of Quality Measurement at the Joint Commission. And what that means basically is that I have responsibility for the team who develops all of our standardized performance measures who are our accreditation and certification programs and sort of by default I inherited the responsibility for our work with eMeasures as well. And so that's I guess why I'm sitting here.

Here is our lovely mothership. I just always like the opportunity to get this in here. Mostly I'm sure that everybody has heard of the Joint Commission. But our mission is to -- and the important words for me here are to continuously improve healthcare by evaluating healthcare organizations.

And one of the ways that we evaluate healthcare organizations and this has been going on since 2002 is to require hospitals to collect data and to report data
to the Joint Commission as part of their accreditation requirement.

So we started in this measure development space actually probably 20 years ago but as I said it's only been 10 years since hospitals have been required to collect data for us. But that's why we did it, to help inform the accreditation decision.

And this is probably difficult for you to read on the screen but in a nutshell it is our measure development process, our paper-based measure development process. If you look it doesn't vary very significantly from the process that Sharon and her group follow.

But basically we start with a literature review and an evidence review. We also have established technical advisory panels and the people on the panels generally speaking are content experts. Our measures are developed in sets and the idea there being that if you appropriately define all the domains of treatment and care for a particular
clinical topic, if you look at the results of measures in each of those or as many of those domains as you can find measures you can pretty much get an overall picture of the care rendered to people by that healthcare organization. So we try to get technical advisory panel members who can help us identify those domains and can help us identify measures that are already out there. Whenever possible we try to use existing measures.

We also have public calls for additional measures after our TAP has determined the need for specific measures in specific domains. Our group then gets together in terms of drafting a measure set and draft specifications. They go out yet again for public and stakeholder comment.

It's very important to us and the Joint Commission prides itself on the fact that the measures that we use are very heavily evidence-based, they're based in science. And
so all of this public feedback and all of the technical expert feedback is our way of trying to ensure that we get that.

After we have settled on a final set of draft measures our staff goes into the in-the-weeds process of doing measure specifications development. That includes all the things that Sharon talked about, numerators, denominators, exclusions. Each data element required to compute a measure is identified and defined in what we feel -- felt I guess is a very precisely defined manner. We have measure calculation algorithms and so on and so on and so on.

We also do alpha testing of our measures. We also do an extensive pilot testing of our measures including reliability testing where we actually go out to hospitals who are piloting the measures and do re-abstraction of data that has already been abstracted by the hospital and do a data element by data element comparison.
We also do validity checks with the hospitals on alphas, all of the things that Sharon’s talked about. And then basically we come back to our TAP and say here’s how the pilot test went, these are the things that we’ve learned and the reliability examination and these are the final measures that we would recommend. What do you think.

And then presumably we get finalization of a measure set. We prepare them for national implementation which means not only implementation by the Joint Commission for use in accreditation. We have 14 sets of measures that are available to hospitals to choose and presently hospitals are required to collect on at least 4 of those measure sets if they want to be accredited.

Also, preparation for national implementation involves going for NQF endorsement and I say ditto, ditto, ditto to everything that Sharon said.

Our measure development process
takes about 24 months including the pilot testing and that doesn't include the time, the
1 to 3 years that it takes to get a measure endorsed by the National Quality Forum. It is
a very expensive and extensive process.

As far as the eMeasure world is concerned we sort of fell into it or actually were pulled into it. And we've been involved with measure retooling for meaningful use since the very beginning and in fact weren't even aware of it for awhile because the determination was made to use two of our measure sets for the HITSP back in the day if you recall that acronym. A retooling process that eventually resulted in the HITSP Technical Note 906, is that right? Okay. And version 1.1.

And we actually had a very peripheral role there because we really didn't find out about it until it was underway. And but we decided we really need to learn about this don't we. And so we also have
participated with CMS in the re-retooling of
the TN906 measures. And again last summer in
the re-re-retooling of the stroke and the VTE
measures.

And we have certainly learned a
lot since that whole experience started as I
think we all have. You know, the models have
come a long way and everything else.

We also have participated
unfortunately -- I'll put in a little plug for
the Joint Commission. Everything that we have
done as far as eMeasures to this date we have
done for free on our dime. We are not CMS
collectors and it has been a very, very
labor-intensive process.

So we also have worked with CMS
contractors to retool all -- a lot of our
other measures as well. So at this point 27
of the 29 hospital measures in the Meaningful
Use Stage 2 program have been developed by the
Joint Commission either alone or in
conjunction with CMS with other CMS
contractors. So we really have been working very heavily in this space and it's been a steep learning curve but we are certainly learning.

As far as where do we go from here and what are we going to change in our measure development process, well, obviously when you heard me talk about the composition of our technical advisory panels you didn't hear me say anything about EHR vendors.

Obviously that's a problem because one of the issues that we have realized in the efforts to retool our measures is that there is a degree of clinical complexity in our measures that most and probably all EHR systems are not able to collect. And our concern is that the clinical richness of our measures and the evidentiary base for the measures is going to be compromised. So obviously moving forward as we begin to do de novo eMeasure development we need to work with vendors and to talk with vendors to figure out
what it is that an EHR can collect that we
need from a clinical and from an evidentiary
perspective.

So that's our challenge moving
forward. We're looking forward to working
with all of you because I agree also with
Sharon, collaborate, collaborate, collaborate.
This is what we need to do to move forward in
this space and to come up with electronic
measures that actually reflect the clinical
richness that measures used for actually
improving patient care require.

So, we look forward to the
challenge. Thanks for letting us speak this
afternoon and thanks.

DR. BUTT: Thank you, Ann and
Sharon both. It looks like we have 20 minutes
left and I'm going to turn over to Rosemary to
start the process of the closeout session.

DR. KENNEDY: We'd just like to
wrap up if folks could stay just a little bit
longer. And would all the panel members, the
coordinators for the panels and the speakers, if you would come to the front of the room and repeat your presentation from this morning.

(Laughter)

DR. BUTT: So first of all, I think as Rosemary said we'd like to thank you all for participating today in this session. I think it was truly a multi-stakeholder session. So we've got doctors, nurses, pharmacists, information technologists, measure developers, EHR vendors, futurists, government people. So everybody was in the room and had some really nice dialogue which we hope will continue as we move forward.

So, I think in this wrap-up session the idea originally was to sort of, you know, try to sort of see if there were any gaps in our trying to come up with best practices or specifically if there were any specific recommendations going forward. And so if there is anyone who feels that there was something in any of those three areas that
they didn't get a chance to either ask or make a comment on please feel free to come up to the mike or if people online would like to ask the question now is the time. You never get — especially the measure developers like this in front of you.

So, anyone want to? Kathleen?

DR. CHARTERS: Something that was implied but not specifically addressed so I'll bring it up now is my concern is when we let people pick the measures that they're going to use, and I'm not saying it's a bad thing, but the caution here is are we going to end up fostering disparity of care as an unintended consequence of that? Because I think when we're trying to move forward with care and what we're measuring and how we measure it if we allow people to select what they're going to measure do we end up with a system that has disparity in the quality of care it's delivering?

DR. BUTT: Anybody want to tackle
that?

MS. WATT: It's a good question and I have to tell you I haven't really given it a lot of thought to be honest with you. I guess you know the easy answer is to say well, you know what? In real life because most of the measures that we offer to hospitals are required by CMS as part of the Hospital Quality Reporting Program really they need to collect them. They're voluntary for the Joint Commission, they're mandatory if they want to get their full payment and of course most hospitals do.

I think what we count on, and maybe this is not a -- maybe this is a very naive assumption but we believe that hospitals should be choosing to measure those areas where they understand that they have gaps and they have need for quality improvement. And to the extent that that happens I think it is to the consumer's benefit because hospitals are in fact looking at areas where they know
their performance may be a little bit weaker. Again, may be naive but that's our philosophy on the matter.

DR. PALEN: Well, actually I want to change the question a little bit and challenge the measure developers and CMS to look at not healthcare now but look at it 15 years from now.

At Kaiser we already have pilots going doing video, realtime video consults, asynchronous consults by a video digital imaging. One-third of our patient contacts, over one-third are email communications, so email visits.

We need to be able to account for those kind of care delivery models that are going to become more and more evident and persistent as the twenty-somethings who do nothing but text. They're going to want their healthcare delivery not in face-to-face. We have to have CMS not require face-to-face visits because healthcare is going to be
remote monitoring. Thinking about assisted living and SNFs, those data feeds are going to become by remote products. Apps on your smartphone. Ford's car that you sit down and it's sending your blood pressure and pulse, right?

Those kind of things are where we need to be looking for 15-20 years from now. We cannot keep designing systems and metrics based on what healthcare looks like today.

DR. STUMPF: So I'd like to address the comment more directly here about disparities because I think part of that patient characteristics that I showed you includes things like the social environment in which they live, their capabilities in terms of transportation. Are they in a food desert. What kind of community resources do they have. Do they have health literacy problems. So I think that may be where you were going with this is that we don't consider that kind of variation in the patient population and how we
can address them and create tasks that are appropriate for those characteristics.

DR. CHARTERS: I really was talking about the healthcare delivery system itself and how if different healthcare systems all have different sets of measures they're using do you end up with if you're looking at a bar graph a really uneven up and down quality of care delivery. That's the question. I'm just throwing it out there because I know Meaningful Use Stage 2 --

DR. STUMPF: You're talking about variation in outcomes.

DR. CHARTERS: Well, not just outcomes.

DR. BUTT: I think you might be referring to the fact that there are measures that are used that are not uniformly specified. So that's kind of where the NQF comes in, that once you go through the endorsement process they become national measures and standards. And so that's kind of
where -- that's the whole concept behind the NQF to try to eliminate that sort of variation amongst the different measurements. If I understood.

DR. CHARTERS: It's not really, no. That it was possible that there would be some measures that -- no organizations would be using or working on. And could that cause disparity. Because some areas of quality would not be --

DR. BUTT: Right. And that's kind of what -- I think that's kind of what the government is trying to do to map these back to the National Quality Strategy and then try to build those into the stages of meaningful use so that everybody is measuring assuming that they care for those types of patients. Okay, thank you. Yes, sir.

DR. ROBERTS: My question is probably a little more pragmatic.

We are -- I've heard from many sources including several today it costs about
one hundred twenty-five to one hundred fifty thousand dollars to create a measure. No one has yet addressed how much it costs to create a de novo measure.

Creating a measure, making that numerator and that denominator, identifying the research behind it, rolling it out, testing it in a paper world costs one hundred twenty-five to one hundred fifty thousand dollars. Got it.

What about how much is it really going to cost us to create these measures that we can use on an Allscripts system and an Epic system and a Cerner system and so on and so on and so on, that we can collect the same data elements in the same way from all these different systems using an electronically created measure that actually gives the same numerator and the same denominator in the same way to the person who's looking at those outcomes who is probably my grandma or someone that really thinks it matters.
Now, she might not be looking at that measure but she might be looking at the hospital's website that says we provide X quality based on this measure and comparing that to another facility that says no, no, we provide Y quality on this measure. And knowing that one hospital is using Epic and one's using Cerner and both of them are giving the exact same valid response.

DR. BUTT: Anybody want to take that? No? So I think that --

(Laughter)

MS. WATT: Actually, if I were a cynic I would say well, we're never going to get to that point because Epic and Cerner are not going to be able to collect the measures, or one of them is and one of them isn't. You know, that's really where we are right now and that is the challenge. We all need to work together so that all EHRs can collect the data and the measures that are thought to be important to push the quality of care in this
country.

DR. BUTT: I think Helen wants to say something.

DR. BURSTIN: Hi, Helen Burstin again. I just wanted to let you know that one of the things NQF is about to embark on is some work funded by HHS to actually try to figure out what is eMeasure feasibility, how it relates to validity. So we're going to try to be doing an environmental scan of what are the current approaches, what works, what doesn't work and see if we can actually help create a set of standards that we can put out there that people can comment on and say is this the right approach. How many EHRs do you need.

(Applause)

DR. BURSTIN: It's so rare for developers to clap for us. Thank you, Ann.

(Laughter)

DR. BURSTIN: So, anyway, if anybody has any thoughts or is interested in
this please let us know. It's got a really short time line, done by January. So really quick.

DR. BUTT: Very good.

DR. STUMPF: So the comment I have is think about what a learning system really would do. Because a learning system would also identify problems and have evidence to support the nature of that problem and therefore the potential path to a solution. So if we can identify best practices using a learning system we can really automate the generation of evidence and rules from the system itself.

So right now we're thinking about we have a rule, we're going to measure it and then we're going to, you know, do a continuous quality improvement cycle. But you can enter that cycle maybe at a different point using a learning system.

DR. BUTT: Sure. Yes, sir.

DR. NERELLA: So one of the things
that I feel that I would like maybe the National Quality Forum or someone -- I think, Zahid, I talked to you about this earlier was having a unified document or something that kind of talks about some of the things that we've talked about. Like the definitions of problem lists, what should be on there, what, you know, those kind of things and unifying that in a way that -- I think we've all talked about it in different ways. But the question is when you leave it like that there's a lot of room for interpretation and then you have a lot of variance. Setting more of those guidelines.

And the other thing I think I'd like to see is how do we engage our younger generations that are coming into healthcare to be more aware. One of the things that struck me was we had a new cohort of hospitalists join my group and I was kind of tasked to help them with using our EHR and kind of bringing them up to speed.
And when I talked to them about meaningful use all I got was blank stares. I'm like how can you guys not know at least what meaningful use is. You know, I think like Ted was talking about, I think the younger generation is going to be more tech-savvy but I believe there's always going to be a spectrum.

You're going to have people who are always going to be the high performers no matter what, you're going to have people who are in between, and then you're going to have those that kind of lag behind no matter what it is. I see that in my girls. You know, my oldest daughter, she's very smart but she doesn't really care about technology as much. She can use it but she's fine. My second daughter, she's all over it.

And I think we need to start helping our people that come into healthcare understand the use and the importance of what healthcare IT provides to them and help them
to become not necessarily the highest
performers but get them closer to that N so
that they are using the technology that's
going to be available to them in a much more
efficient manner and a way that the data is
going to be available for us and all that kind
of stuff.

And I think we need to start doing
that now and getting people aware of it. And
I think we need to have some kind of model
that will start spreading that news.

DR. SOBK: Actually there is a
model. That's the good news. So part of the
HITECH Act was to say wait a second, we're
pushing forward this whole technology but we
need trained people to support this new
technology, right. And so the HITECH Act
actually funded a certain amount of money to
go into universities, I think it was six.
Six, eight. And then there was also money for
community colleges.

And the reason that I'm very
passionate about this is because I'm taking advantage of one of those university programs. And before our university program started we actually had to go through a couple of the community college sets. And again, this is all online so it's entire lectures online with the slides, right.

So what our professors did at Hopkins is they said before we start this program we're going to level-set everybody and you're going to have to go through some of the community college pieces of education. And I have to tell you they were fabulous.

And so this is out there. We just need our medical schools to take advantage of what has already been funded and created and repurpose it. Because there was a colleague of yours right in the front who was literally talking to me about the same thing at break, that we need to make sure that this new generation understands this.

DR. NERELLA: And maybe it's
bringing the awareness. I think maybe that's what it is.

DR. SOBKO: Maybe.

DR. BUTT: I think in response to your first question one of the deliverables of this eMeasures Learning Collaborative for this cycle is to create a report from all this multi-stakeholder feedback. And we will try our best to incorporate as much detail as we can of repeatable models around problem lists, medication management because that's really what the purpose of this whole discussion and secret recording is, to try to get it into some kind of a document that will be delivered to HHS in November. Is that correct? Right?

So hopefully we will incorporate more information that will be useful. Yes, and it will have a comment period so please feel free to comment on it.

MS. POLLARD: I'd like to just comment to yours for a minute. I think we need to embrace this paradigm of the new
We had a 16-year-old OB patient in our hospital and she would -- the nurses would go in, speak to her. She was so non-communicative. They went to the desk and started texting her and she would tell them how she was feeling, what she was going through. That's how they provided her education. And she really got into it and opened up to them and her whole attitude changed because that's the way they communicate.

The other example is we were having a downtime for an upgrade and we had what I call a baby nurse come to her charge nurse and say, "Well, I can't give meds tonight." And the nurse said, "Well, what do you mean you can't give meds tonight?" "Bar code scanning's down and it's not safe." So their whole mentality has changed. And somehow we've got to capitalize on that to invest them in the next solutions.
DR. STUMPF: So my comment about this last remark has to do more with usability. I mean you do have different capabilities and you have to have something that works despite that variation.

So an example would be your anti-lock brakes on your car. You're driving on ice. Both of your daughters should be able to stop the car with that device. The computer is doing that work behind the scenes. All they know is they want to step on the brake and have the car stop smoothly. And if we really design systems right the kind of variation you just described wouldn't be relevant.

DR. BUTT: Okay, I think one last question.

MS. SWANFELDT: This isn't a question, it's just a comment regarding the next generation and providers. I have discussed this with medical school administrators and apparently the curriculum
for med schools was revamped just several years ago. And there's just no room is what I keep hearing. There's just no room for this. So, there's a disconnect there.

DR. STUMPF: It's like genetics. Genetics is everywhere and you teach genetics in context and HIT is everywhere too or should be.

DR. BUTT: Okay, I think that concludes the day. And we again thank you very much. On behalf of the Programming Committee for the eMeasure Learning Collaborative I'd like to thank you all for participating and engaging with us. And please stay tuned. You'll probably hear about some of the outcomes of this and previous meetings. So safe travels and we will be in touch.

DR. KENNEDY: And I just want to take this opportunity to thank Dr. Zahid Butt and the whole entire Planning Committee because it really did work hard to bring this
together.

(Applause)

DR. KENNEDY: And we will be pushing the report out to you when it goes for public comment. So please share it with all the key stakeholders because the purpose is to provide recommendations that represent everybody that participated today. Safe travels.

(Whereupon, the above-entitled matter went off the record at 3:29 p.m.)
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