Hello everyone. Thank you for joining us today. I am very excited to be talking to you about patient-centered care and how we can begin to incorporate patient-centered outcomes into the way that we measure the success of our healthcare delivery systems.
So my hypothesis today that I am going to be talking to you about is that when we put the patient back at the center of our measurement matrix, we can bring coherence and completeness to the picture of care delivery performance across the patient journey, and therefore the performance of the healthcare ecosystem.
Poll Question
Where are you on the journey to patient-centered outcomes measurement? 86 respondents

a) Pre-contemplative – 8%
b) Contemplative – 17%
c) Preparing/Researching – 29%
d) Action/Beginning – 28%
e) Maintenance/Expanding – 17%

Poll Question
Where are you on the journey to patient-centered outcomes measurement? [01:12]

So this brings us to our very first poll question. Tyler, take it away.

[Tyler Morgan]
Thank you. Alright. Our first poll question, where are you on the journey to patient-centered outcomes measurement? Please select one of the following. Either pre-contemplative, contemplative, preparing/researching, action/beginning, or maintenance/expanding.

So we will leave this open for a few moments as you select. And we would like to remind everyone, we have had a couple of questions with some folks joining us late. Yes, we will be sharing the slides after the webinar.

Alright. Let us go ahead and share our results.
So, 8 percent responded they are pre-contemplative, 17 percent contemplative, 29 percent preparing/researching, 28 percent action/beginning, and 17 percent with maintenance and expanding.

**[Carolyn Wong Simpkins]**
So this is fantastic. I am very much looking forward to the Q&A and discussion portion of today's session to hear those of you who are beginning and expanding your efforts to hear what you have been doing.
So, I am going to start with a big picture of our purpose. Ultimately, talking about patient-centered approaches to outcome measurement is about being able to measure what we need to measure, what is important in developing a patient-centered health ecosystem. And I like to use the phrase "health ecosystem" very deliberately because we are, particularly in the U.S., had siloed in our particular health systems, and really what matters to the patient is the entire health ecosystem that encompasses all of the healthcare providers they may encounter in their community and in addition to that, all of the other resources, both personal and community-wide, which impact upon their health.
What are Outcomes? [03:15]

So, what are outcomes?
Well, let us start with what we measure now and why. I am not going to go through all of these different buckets of metrics. Any of you who work in health systems have suffered the pain of dealing with the wide array of measurements that we need to comply with and report on currently. But what I would point out to you is that all of our current measurement is oriented towards measuring how healthcare is doing.
What about measuring how the patient is doing?

How are we measuring how the patient is doing?
So of that spectrum of metric categories that we currently engage in and spend so much time and resource dealing with, there is really one category that speaks directly to how our patients are doing and that is the clinical endpoints category of metrics. And really ultimately the outcome that we most universally measure to do with our patients is mortality. I am not going to – of course, mortality is a very important metric for patients but I think no one would argue that that is the only measurement that matters to our patients. And so, the challenge of patient-centered outcomes is to begin to define for different patients with different conditions, facing different procedures perhaps, what their other outcomes that matter might be, how do we define those and how do we begin to pay attention to them and measure them.
So, I am going to give you a visual image that helps, I think, I hope, to understand the difference between patient-centered measures, patient-reported measures, patient satisfaction, and everything else.

So this is the ice cream, patient-centered outcomes is the ice cream. This happens to be a chocolate chip ice cream. So the patient-reported outcomes are a subset. They are embedded in the patient-centered outcomes. They are subset of patient-centered outcomes but they are not all of patient-centered outcomes. Patient-centered outcomes can include measures that we capture objectively in the health system but they are important for that patient group from the patient’s point-of-view, in addition to being measures that we think are important and already capture perhaps within healthcare. The patient-reported outcomes are, on the one hand, extra and a subset. On the other hand, you cannot have a chocolate chip ice cream without the chocolate chips.

So here is the cone. I am categorizing in this metaphor all the other measures as the cone. And the important point there is that the cone is important, you are not going to be able to eat your ice cream without the cone, but the cone is not the point. Nobody opens an ice cream cone to store. The cone is the delivery mechanism.

And finally, there is a cherry on top and that is the patient satisfaction. Patient satisfaction is distinct from patient-centered outcomes. Patient-centered outcomes are health outcomes. Patient satisfaction is the patient's experience of healthcare.
Definitions

Patient Centered Outcomes (ice cream): the health outcomes that matter from the perspective of the patient, e.g. avoiding dialysis vs preserved creatinine clearance

Patient Reported Outcomes (chocolate chips): health outcomes reported by the patient, e.g. level of pain

Patient Satisfaction (cherry on top): holistically how satisfied the patient is with the experience of healthcare, enhances the patient’s journey but not a health outcome per se

All other measures (the cone): a means to an end – delivering to the patient the health outcomes they care about

So here I have written out those definitions for you. The ice cream is the patient-centered outcomes. That is ultimately the point of healthcare. They are the health outcomes that matter most from the perspective of the patient. The chocolate chips are a subset of the ice cream but they are very important and they are the outcomes that need to be reported by the patient. There is no objective external way to measure level of pain that needs to be reported by a patient.

The patient satisfaction is distinct from patient-centered outcomes. It is holistically how satisfied the patient is with the experience of their healthcare. It is an enhancement to the patient's journey but it is not a health outcome. All the other measures that we spend a lot of time on are extremely important. As I said, you cannot eat your ice cream without having the cone hold it but they are means to the end. Ultimately, the purpose of our work is to deliver the health outcomes to the patient that they care about.
So, I think we said in our description of today's webinar that we are going to explain how we are perhaps poised for a breakthrough. So I am going to lay out the reasons why I think that is the case.
These have been some of the challenges to implementing patient-centered outcomes that we face. There is a deficit in knowledge base. Experience and evidence base of validated patient-centered outcomes is still far left of the early adopter end of adoption curve, and we are very fortunate that in our audience today we have so many pioneers in this space, and it takes a great deal to get comfortable with subjective versus objective measures. And then there is the cultural challenge of measuring an outcome that you do not have control over. If you measure outcomes from the patient point-of-view, you are dealing with outcomes which are the result of not only your actions but also actions of other healthcare providers and actions outside of healthcare entirely.
So, why do I think we are poised for a breakthrough? Value-based care models are driving us to go ahead and integrate across healthcare silos to cooperate with one another and sometimes even into the community. We now have data lakes or EDWs that can ingest an increasing variety of data types and integrate them. There are emerging tools to capture patient-centered and patient-reported outcomes more systematically and electronically and then feed them ideally into the aforementioned EDWs and drive analytics. And we also now have text analytics hitting a maturity level that allows us to unearth data from text, and that could become very interesting down the road in this space. We have an increasing range of PROMs and PCOMs that are being validated globally and in fact, by many of the people on today's webinar. And finally, I think the quality movement and safety movements have been working hard to establish a culture of transparency to get us comfortable with measuring and dealing with outcomes that incorporate many different contributing factors, some of which are outside our control.
So I am going to go through some of these a little quickly.
I think you have all probably seen the value equation for healthcare that Michael Porter described so eloquently.
Marc Berg, Principal, KPMG: "The value of care delivered cannot be measured silo by silo"

We are drowning in measures because all professions and provider types are eager to demonstrate their own quality...

...yet the overall quality and cost of care is the outcome of the interactions of all these activities and interventions.

From a patient & payer perspective, what matters is what the overall outcomes and the overall costs are of this care.

Marc Berg, Principal, KPMG: "The value of care delivered cannot be measured silo by silo"

My good friend, Marc Berg, who works on health system transformation in the public sector for KPMG, graciously allowed me to borrow this slide, which really makes the point that we cannot potentially, we cannot conceivably measure the value of our care, even the true outcomes of care by measuring silo by silo, and that is exactly what we do now. What matters is the outcomes that result from the entire spectrum of care, and that is what patient-centered outcomes are about.
I am going to skim through this but the point I want to make here is that we are on this journey. We may be sped up or slowed down by public policy and politics but ultimately we are on this journey towards a population value-based model of healthcare. This is a movement that is happening globally and there are some very interesting lessons to be learned by looking outside the U.S. to what has been done on the space of the evolution to value-based care.
Value Requires Healthcare Become Data-driven [11:43]

So this is a busy slide that I show you just to make the point that in order to think about value and measure value, we need to be data-driven in healthcare, and to be data-driven is complicated. That is really all I wanted to say.
Outcomes complete the picture [12:00]

So, let us look at, let us take a moment to think about how outcomes and putting the patient at the center enables us to get a view across the entire care continuum.
We have the patient at the center, we have patient outcomes, we have clinical outcomes, then we have the patient’s environment and ultimately new culture.
So here is another way of looking at that. What we traditionally do when we measure healthcare is we have a hospital system view or a provider view, and you have your hospital and you have all these different measures in your hospital but you do not have any real view into what is happening with quality in the post-acute care space, in the outpatient space.
If you reorient to the patient outcomes point of view, then you define your overarching health goals for a particular patient group, you have different arenas of potential interventions, some of which are health system that controls directly and some of which require collaboration. And finally, you have your actionable metrics. So this is actually to say that patient outcomes are not separate or replacing all of the measures that you already track. They are an overarching coherent factor that I would argue is a very useful construct in order to fully understand how your patients are doing and whether you are ultimately accomplishing what you set out to do as a health system.
“The 5% of all patients who are seriously ill and need the most medical care account for a disproportionate 50-60% of total healthcare spending. [1] The problem is not that caring for the sick and the complex costs more than caring for the well and healthy; of course it does. The problem is that how we spend that money typically fails to address the top priorities of such patients and their families and caregivers.”

Diane Meier

"The 5% of all patients who are seriously ill and need the most medical care account for disproportionate 50-60% of total healthcare spending..." [13:40]

This is a statistic that many people know but I think the point that Diane Meier makes in this article is really important. We know that the 5 percent who are sickest are going to cost more. That makes perfect sense. The problem is that because we are not even measuring or asking what the outcomes are that are important to the patient, we are not even spending that money on the priorities that the patients and their families have.
So now let us get a little bit more practical. Let us talk a little bit about tools. And I will warn you that we do not have time today to get into tremendous detail but perhaps in a follow-up.
So I am going to give you a little flavour for the different aspects of actually implementing our patient-centered approach to outcome measurement.
So I am going to talk a little bit about principles and best practices. I am going to talk a little bit about two potential sources for established patient-centered outcome measures, as well as PROMs. I am going to give you a quick view of what a tool can look like for collecting patient-centered outcomes, patient-reported outcomes, and finally come back to the point that patient-centered outcomes are useful capstone to your outcomes matrix.
Principles for Defining Patient Centered Outcomes

Outcomes are results of care for people with similar needs, across the complete care cycle, often spanning different providers of care

Outcomes which matter most are best co-defined with citizens and service users

Defining, measuring and interpreting is easier and more valuable when we group by needs (patient centered view) than by intervention or specialty (provider centered view)

Dr Rupert Dunbar-Rees, Outcomes Based Healthcare

So, this is another colleague of mine, Dr. Rupert Dunbar-Rees, who works for an organization called Outcomes-Based Healthcare based in the UK. And this is his description of what a patient-centered outcome should be. And I will leave you to read through this on your own but I think two important takeaways are in an ideal world, you would co-define a patient-centered outcome with the patients and the second important takeaway is that if you are going to take a patient-centered approach to outcomes, you need to be thinking about grouping by patient needs, patient groups, rather than grouping by specialty or intervention, which is our provider-centered point of view.
Patient Centered Outcome: Avoid Dialysis

Define the denominator: all patients who would prefer to avoid dialysis but are at risk due to progressive chronic renal insufficiency (or ask)

Define the numerator: all patient who are not on dialysis, weighted for # person-years in cohort, and also not deceased

So I am putting a very simple exercise. What if the patient-centered outcome is "I wish to avoid dialysis." So this may be a patient population of type 2 diabetics who may or may not have been well controlled over the course of their chronic illness. Your next step is to do what you do with every metric. You define the denominator and you define the numerator and I am not going to run through this. This is kindergarten level metrics but the point is that if you take things step by step, defining patient-centered outcomes is not inherently more difficult than any other type of measurement that you are already capturing.
Poll Question

In how many situations does your hospital/health system systematically ask the patient’s goals/preferences? 90 respondents

a) 0 – 21%

b) 1 (code status/end of life) – 35%

c) 2 or more – 44%

Tyler Morgan

Thank you. Our next poll question, in how many situations does your hospital or health system systematically ask the patient's goals or preferences? Please select one of the following. Zero, 1 or 2 or more.

And while this is up, I would like to remind everyone, I forgot to mention at the beginning of the webinar that we have actually loaded these slides up into your control panel. If you go to the handouts section of your control panel, you can actually download these slides directly during the webinar itself.

Alright. Let us go ahead and close the poll. And let us share our results.
Poll Results [17:27]

We have 21 percent responded with zero, 35 percent responded 1, 44 percent responded with 2 or more.

[Carolyn Wong Simpkins]
So, once again, we see that this audience is above the curve and I underestimated. I should have given you more options for more situations, but it would be very interesting to hear more about that later on in our discussion. And I think this also speaks to what is challenging about capturing patient-centered outcomes is embedding it into your process.

So let us move on.
So, I mentioned earlier how interesting it can be to look outside the U.S. to see what is being done in other places. This montage of images, as you can see, is clearly labelled an NHS Listening Event and this is a regional NHS group organized a day of working with patients that they serve to define the outcomes that mattered to those patient groups.
And so, what is useful to take away from this, I think, is that it can be done and it has been done and therefore there are processes and templates in place that you can secure if you wanted to go all in and actually engage with your patient communities to define the outcomes that matter the most to your patients.
So, getting a little more practical than that. For most of us, while we want to at least confirm that the patient-centered outcomes we think are important for patient groups are important, the easier more straightforward path is to seek out established and already validated PCOMs and PROMs from external sources, identify as a health system, the ones that seem applicable to the patient groups with interest to us and then plan to deploy those.
So, there are two main potential sources of many that I am going to call out here. This is PROMIS. It was established and continues to grow with NIH funding. Therefore, everything is publicly available free of charge. The scoring is standardized. It is widely used both in the U.S. and actually abroad to some extent and this is a fantastic source for ready-made PROMs, patient-reported outcomes.
Another interesting organization working in this space is called ICHOM. Its offices are in Cambridge Mass cofounded by Michael Porter and it works to establish a methodology and then convene international experts to define patient-centered measure sets for common conditions. And for both of these organizations, I have included their websites and what you will have for slide deck if you would like to follow these links and look them up.
And those are two of many different organizations, not least of which are the organizations including some of those on this call who are already working, have already begun to deploy patient-reported outcomes and patient-centered outcomes in their local health ecosystems. And I think nothing beats finding a mentor organization that is really doing it in the real world. So I would strongly encourage you to seek those organizations out and to collaborate.
So, I am going to show you just a visual of a potential way of electronically capturing scheduled patient-reported outcomes which are the most challenging in terms of developing the tools to capture the data. Traditionally, we capture this data just using a pay-per-survey instrument which, as all of you know, then commits you to the expense and time of having that data manually transcribed to some form of analytics even if it is just an Excel spreadsheet. So it is exciting that now we are at a stage in technology development that smartphones are not universal but they are fairly widespread and they are a fantastic tool which is possible to get out directly to your patients wherever they are.
Example: Care Companion
Step One: Enable Push Notifications

Example: Care Companion
Step Two: Setup Security PIN
Example: Care Companion
Step Three: Setup Fitness Trackers
Example: Care Companion
Tracker Setup [22:37]

And we have been working on setting up an app that incorporates lots of patient sources of data that impact on their health, integrate into data sources for health systems and incorporate analytics and also can deliver scheduled patient-reported outcomes, which I think is particularly exciting.
Example: Care Companion
My Appointments, My Activities, and Closed Activities

Example: Care Companion
Are you experiencing any of the following symptoms:
Example: Care Companion
How was your overall sleep quality last night?
Example: Care Companion
Thank You [23:02]

So you may have a patient population that you want to track their progress of their symptoms after discharge. Perhaps you are trying to combat readmission for a COPD population, perhaps you are just trying to track recovery times to full functionality after an orthopaedic procedure.
Example: Care Companion [23:24]

As your patients go home and out into their normal lives, it is really nice to be able to interact with them and also to pull in data about their status.
Example: Care Companion
Appointment

Example: Care Companion

Example: Care Companion
Example:
Care Companion

Example: Care Companion

Example: Care Companion

Example: Care Companion

Problem Plan
Example: Care Companion
Problem Plan
And so, I think that is one of the things that for me makes this a very exciting time to be implementing a patient-centered approach to outcomes. Patient-reported outcomes are on the verge of being sort of accessible and much more easy to deploy.
So, it brings me back to my patient-centered health ecosystem graphic. So I will pause on this for a moment to say this is a sort of a draft, a view of the different types of new skillsets and maturity of activity that need to be developed into ultimately a fully evolved patient-centered health ecosystem. And the point that I make with my made up scores on these different dimensions is that you cannot expect to progress on all events at once and that it is possible to make progress by progressing on some of them while continuing to work on others. So in this hypothetical, I have a health system which is very early stages, perhaps pre-contemplative, with patient engagement but they worked hard on the lower right on their outcomes data capture and their analytics. They have worked hard on aligning their outcomes metrics and their approach to care coordination with value-based payments. They have been identifying how those overarching patient outcomes align with all the various clinical process, structural and reportable measures that they are going to continue to engage in. But for example, they are still working on integration across all health settings.
Poll Question
Which aspect of patient centered health are you most challenged by? [25:41]

99 respondents

a) Engaging patients to identify outcomes and capture PROMs – 43%

b) Integrating the data from numerous sources / silos – 53%

c) Integrating care processes and outcome metrics across silos – 54%

d) Developing analytics insights from this data – 46%

e) Developing actionable decision support from this data – 53%

So this brings me to the next poll question. Tyler?

[Tyler Morgan]  
Yes. Thank you, Dr. Simpkins. Which aspect of patient-centered health are you most challenged by? You can select one or more of the following: Engaging patients to identify outcomes and capture PROMs, integrating the data from numerous sources or silos, integrating care processes and outcome metrics across silos, developing analytics insights from this data, or developing actionable decision support from this data.

Again, this is select as many as are applicable. And we will leave this open for a few moments to give everyone a chance to respond.

Alright. We would like to remind everyone, while they are responding, you can type in your questions and comments in the questions pane of the control panel.

Okay. Let us go ahead and close this poll and share our results.
Poll Results [26:43]

So, 43 percent responded that engaging patients to identify outcomes, 53 percent responded with integrating the data from the numerous sources and silos, 54 percent integrating care processes, 46 percent developing analytics insights from this data, and 53 percent developing actionable decision support from this data. It looks like some fairly even mix of all of these seem to be big challenges.

[Carolyn Wong Simpkins]
It is all of the above, which was actually my original writing of the poll question. So, great. While these are all things that we can and should continue to work on together as a community and I think we will come to this in the Q&A but someone has asked about establishing the group attending today as a group that can reconnect going forward. So we will come back to that.
Okay. So I am going to give you two examples I find particularly interesting of organizations that have begun to pioneer the concept of patient-centered outcome measurement and what they have done with it.
When surveying patients to determine the outcomes of greatest importance to them, ParkinsonNet staff learned that the highest priority needs of patients (e.g., sexual and sleep complications) were not always the top concerns of physicians (e.g., tremors).

"Changing the way healthcare is delivered: Patient centered Parkinson disease care" *BMJ Outcomes 2016*

So, the first is a Dutch organization, called ParkinsonNet. And if you have a chance, look up their Bas Bloem and his TED Talk, it is fantastic. And this organization has really revolutionized Parkinson's care by rethinking the way that they measure whether they are successful in caring for their Parkinson's patients. So, they did do the unthinkable and they did go to their patients and asked what are the outcomes of greatest importance to them. They asked on an open ended way and they learned that they were, as clinicians, as a health system, not prioritizing the rights' concerns that were the top priorities of the patients.
Quality of Life [28:48]

This is their graphic, their picture of their health ecosystem and the way that they have reoriented their process around patient-centered outcomes. And again, you will get these slides and I encourage you, if you are interested to look them up, they have developed an international collaboration arm, which is pretty amazing, and therefore, some of their methods have now been they have mentored other systems, including some in the US, to take the same approach to Parkinson's care.
Using high-priority outcomes identified by patients, various process and outcome measurements were developed, including several patient-reported outcome measures.

So, using those high-priority concerns that were identify by their patients by asking their patients and their caregivers their open-ended questions, they developed a variety of process and outcome measures, including but not limited to patient-reported outcome measures that would better reflect the priorities of Parkinson's patients in achieving what they wanted to achieve out of their care for their condition.
Parkinsonnet Patient Centered Outcomes

- Independence (use of home care, nursing home, voluntary care, daycare, rehabilitation)
- Patients’ quality of life (e.g., mobility, activities of daily living, emotional well-being, stigma, social support, cognition, communication, and bodily discomfort)
- Perceived quality of care as seen through the eyes of the patient (emotional support, cooperation, accessibility, providing information, participation, and treatment)
- Employment and social participation for patients with Parkinson’s disease
- Burden on voluntary carers of patients with Parkinson’s disease.

These outcome measures go well beyond medical care and treatment. Coupled with process and outcome measures, such as hospitalizations and hip fractures, these will provide insights into both clinical and non-clinical outcomes that are important to patients.

So this I am not going to read through but it is a sampling of the kinds of priorities that were identified and the kinds of outcome measures that were therefore developed and you will see on the right another quote from the article that points out that the very key point here is that these are outcome measures that go way beyond medical care and treatment, but that they combined these with process and outcome measures, your more traditional healthcare-oriented measures combined with outcome measures that follow the patient into their regular lives, into their communities, and allow the team to think much more creatively and much more broadly about how they could collaborate with and pay attention to doctors outside of healthcare in order to ensure that their patients did as well as possible from the perspective of how the patients would define doing well. Some of the ones that I find particularly interesting are that continued employment and social participation was a much higher priority for patients in this - you know, you can imagine the cringing of explaining to a physician specialist that what their patients really want is to continue to engage with their friends. This is not something we normally want or feel comfortable taking responsibility for but identifying that as a priority and then continuing to think about it as you develop a plan of care is important because it can change the decisions that you make medically to better align with the patient’s goals and that ultimately is what any of us would want as patients and any of us would want for our family members.
So, interestingly, I also had the chance to interact with one of the private insurance companies that is quite prominent in the Netherlands and they work with ParkinsonNet to develop a pay-for-performance program based on outcome indicators. So you can see how all of these forces begin to align very nicely and again, I think, put us on the verge of a real breakthrough in moving to a patient-centered approach to outcome measurement and therefore patient-centered approach to healthcare.
And this is just another view of that. And interestingly, remember, this is a private insurance company but a very forward-thinking one. They have measures that address quality of life and health gain and the more traditional quality of care. So, measuring healthcare in the traditional way and also cost.
Example #2: Improve Care Now (C3N) [33:12]

My second example is closer to home. There is an incredible group based out of Cincinnati Children's Hospital that has been doing credibly innovative work, developing networks that engage patients, family, researchers, and providers.
Well, let me just show you what they have done. It is hard to describe.
So, this is just a map and I think this is actually a little out of date, of some of the sites that have been participating in there, IBD network across the U.S. They also have some sites overseas.
But they are primarily U.S. Children's Hospital practices. So those of you who have any familiarity with inflammatory bowel disease know that it is a very devastating chronic illness that affects adults and children but it is particularly devastating in the pediatric population because it follows them throughout their development and really is very disruptive to their childhood. Because of this interesting—and the exacerbations and flare-ups are amenable to very aggressive medications often require hospitalization and are also impacted by many other forces in the patient’s life—emotions, stress, dietary choices, etc.

So what they developed in co-creation with their patient population and their families is what they called a Eureka N-of-1 mobile app. So this allows defining and collection of outcome data. They have outcomes that are defined as standardized across the entire patient population. They also have a mechanism whereby each patient can define the outcomes of interest to them and work on tracking their status on those outcomes individually and have that information shared instantaneously and continuously with their providers, with researchers when there is a researcher involved, and with their parents. And this is particularly fitting for this condition because of what I mentioned before. There are so many factors that contribute to flare-ups and the medical interventions are very aggressive and severe.
So here is an example of an N-of-1 approach to the care of this particular patient and you could read a little bit about their history. And in this patient, you can see what happened to their self-reported symptoms captured on the go in the app during their courses of Infliximab, which is extremely important in the clinical care of this individual patient and also very interesting across the network for the researchers who are defining and investigating different approaches to the care of these patients.
So, it is powerful for a number of reasons. One is that it is an incredible tool for managing the clinical care of individual patients. It is also an incredible tool for developing a large enough base of patients to do more traditional population level research. This is not a set of conditions that you will find many patients for in any one center. And so, because it is a rare condition, doing research at a population level, achieving sufficient numbers of research subjects to do valid traditional research is difficult. This network and this data tool is incredibly powerful in empowering all of these things to happen.
And you can see the success they have had in improving the care of their patients before they began this approach to tracking patient outcomes and adjusting care plans to match, you can see on the left side of the graph where they were in terms of remission rates and they have achieved, they have gone from roughly 58 percent, 59 percent remission, varying site to site and over time to 80 percent across their network.
Ready for patient-centered outcomes? [38:43]

So, we are coming close to the end. Are you ready for patient-centered outcomes? Or if you are already taking a patient-centered approach to outcomes, are you ready to take it to the next level?
So I am throwing this up again. And just food for thought, thinking about the different aspects of developing a patient-centered health ecosystem and think about how defining a patient-centered approach to outcomes to complete the picture of how your health system is doing will help you to re-design healthcare around the patient.
And then I wanted to throw up another visual that speaks to my other metaphor, which is that patient-centered outcomes are the keystone that hold up the arch of all of our various and numerous metrics that we have to use in healthcare. So, most of you probably already know but the Greeks and the Romans invented the concept of a keystone which allowed them to construct these magnificent stone arches. The concept of the keystone is that the keystone is at the top of the arch in the middle and it is what holds the rest of the arch up. If not for the keystone, the entire structure would collapse.
“Perhaps what you measure is what you get. More likely, what you measure is all you get. What you don’t (or can’t) measure is lost.”

- H. Thomas Johnson*

* Lean Dilemma: Choose System Principles or Management Accounting Controls, Not Both

So it is important to think about what we are measuring. I think that if we can re-define how we measure success in healthcare, we can really revolutionize the results that we are getting for our patients and our communities.
Thank you! [40:25]

Thank you very much. I am going to throw it back to Tyler.

[ Tyler Morgan]
Alright. You will notice in that slide that we do have contact information for Dr. Simpkins, so that when you get the slides you will be able to reach out to her with any questions or things that you have afterwards as well.
If you will advance the slide, Dr. Simpkins, thank you, we have mentioned earlier about our Healthcare Analytics Summit™ this September 12th through the 14th and we do have registrations to give away to the summit. Before we do that though, I would like to mention, you will notice on the right hand side that early bird pricing. That early bird pricing expires this May 30th. So the prices you see up there are good through this May 30th. So let us get to our giveaway. I am going to go ahead and put a poll up.
Are you interested in attending the Healthcare Analytics Summit™ in Salt Lake City? (single registration) [41:13]

Are you interested in attending the Healthcare Analytics Summit™ in Salt Lake City? And this is September 12th through the 14th. This is our giveaway for the single registration. If you would like to, please respond to this. We will leave this up for just a moment and then we will put up the giveaway for the team of three registration.

Alright. Let us go ahead and close that. And let us put up our team of three.
Are you interested in attending the Healthcare Analytics Summit™ in Salt Lake City as a team? (Team of three registration) [41:40]

And we really like to give away these team of three registrations because we really believe with analytics. Being able to bring your team to the summit helps to really move that healthcare transformation and the use and adoption of analytics that much faster. So we will leave that up for a few more moments.

We are getting some great questions coming in. Keep those coming in and we will address those in just a moment.

Alright. We will close that.

Now, we do have one final question for everyone.
Would you like someone from our sales organization to contact you for a product demonstration of our solutions? [42:16]

While our webinars are meant to be educational, opportunities talking about the different facets of transformation in healthcare, we do have people that have asked us more about Catalyst, who we are and what some of our products are. So if you would like someone from our sales organization to contact you for a product demonstration of our solutions, please respond to this poll question.

QUESTIONS AND ANSWERS

And while this is up, let us go ahead and address some of the questions that are coming in. We actually have several questions regarding the sharing of the analytics of patient-centered outcomes with the patients, or their concerns, what levels of transparency should we have.

[Carolyn Wong Simpkins]
I love that question. The answer is yes, you should be aiming to get to a point where you are comfortable sharing those analytics with the patients. I think that the more transparent we can be about the care that we are delivering to patients, the more confidence they have in our care and the more confidence they have that we are thinking about their priorities and that the care we deliver will be aligned with their values. That said, I think that the concerns about transparency are the same as with all other metrics in healthcare. It is more of a question for you and your progress and sort of getting to a culture of transparency as a health system and
your executive team getting comfortable with sharing those results on health system performance with the patients.

In the case of patient-centered outcomes, I think that they are also extremely interesting to share with your community leaders because they speak not only to your performance as a health provider, be you an organization or an individual provider, but they speak to all the other factors including those in the community that impact on patient's health.

**[Tyler Morgan]**

Alright. Thank you. Now, we have a few additional questions regarding the engaging of patients for defining outcomes and particularly communication. Many elderly patients with advanced Parkinson's are limiting communicating, or how do those who do not have smartphones or access, how do they participate just in that, what is the best way to engage. It seems like they are trying to understand that.

**[Carolyn Wong Simpkins]**

Yes. So I showed the smartphone view because I think that it will become – because it is a very interesting tool. It solves a variety of problems and challenges that we have with patient-reported outcomes, including how do we capture electronically patient-reported outcomes, how do we automatically feed that into our data sets, so we can perform analytics and drive insights that we can then take action on, and how do we do so in a fashion that is relatively automated and pushed out to the patient, potentially in the case of what I was showing you on an established schedule. So you know you want to find out how the patient, you want to ask the patient certain questions five days after discharge, two weeks after discharge, a month after discharge. To be able to do that in an entirely automated system where the data automatically comes back in to your system is remarkable and it is game-changing.

However, at this point in time, only certain demographics have access to a smartphone, so it is not yet a universal solution to that problem and I am keenly aware that we absolutely need to find a way to serve all the populations. Someone has just put up this fantastic comment, "Free smartphones to patients in need." Yes, I have heard of health systems offering or loaning devices to patients in order to be able to capture that kind of information. That can be really powerful and it has, for some programs, particularly care measurement programs addressing high cost populations, been a sensible sort of approach and I think it is fantastic. I think another approach is to have – is to collaborate with community centers, libraries, et cetera, where these devices and connectivity are being established as they service to the entire community.

And then finally there is this leveraging of the rest of their family. So particularly with elderly patients, for example, they may not have their own device but they will often have a family member or a caregiver or a friend who does and it can be incredibly useful for a number of reasons to bring the caregivers into the loop, as anyone who has worked on discharge to the community knows, identifying the people who will look after their patient and help them out when they go home is incredibly valuable to that discharge plant succeeding.
Alright. Our next question, "How can PCOMs or PROMs be utilized at the point of care rather than looking at the data information that come from the fact?"

So increasingly data can flow closer and closer to real time and that is part of the power of finding a way to collect information electronically. Depending on the nature of your measure, and the responses, you may or may not want to see an alert, for example, if you are collecting PROMs from a population of patients discharged from a hospitalization for heart failure exacerbation. You would want to know if they responded to one of your PROMs' questions that their weight had gotten off by 5 pounds in the last day. You would want to reach out and get in touch with them immediately. And these are interventions and data flow that is now achievable with the right tools and the right analytics and informatics resources and that I think is incredibly exciting. The other potential place where using PROMs or PCOMs, PROMs in particular, right at the point of care is in the context of a shared decision-making process, which is not something we talked about today but which I think is a really interesting use case for PROMs.

Alright. Thank you. We have got a couple of questions about the apps for capturing PROMs, how real are these, where can I get or pull on a copy of your care companion, what you showed, to see how it works.

Sure. So there are a number of apps that have been developed for this sort of thing by a number of organizations. Obviously, the ASEAN improved care network has developed their own to serve their network. We have care companion. We will take a note of the person who is interested and make sure someone on our team gets in touch with you to get you access to put a demo on your phone, so you can play with it. And when we do that, I hope you get back in touch with me to let me know what your experience was and what your thoughts are.

Okay. "Does patient-centered outcomes include caregiver outcomes? Recently had a friend hospitalized and the spouse complained that the caregivers of the patients seemed to be ignored by the entire health system. So, out of curiosity."

Yes. So, ideally yes, patient-centered outcomes should include the entire patient team, if you will. So that is their family and that is their physicians. I think that this is best illustrated actually in the pediatric space. You would never think to get input from a patient in the pediatric space without also getting input from their family and we should be thinking about that across all parts of the health system outpatient populations.
Alright. Actually, before we go to the next question, we did have one about when and where can a copy of this presentation be downloaded since it is being recorded. So you can get the slides right now in the handouts pane of your control panel and we will be sending out an email with a link to the recorded webinar, as well as the slides afterwards. And in the future, you can find not only this but all of our recorded on-demand webinars at our website at healthcatalyst.com. You have access to all our entire catalogue of prior recorded webinars.

Next question is, "At the beginning you talked about all of this different data that we are collecting. So what is motivating a physician practice to collect any of this when they are not paid for the potential benefit? Physician's offices are the action center for the range of patient types. Are you not introducing new silos?"

So while I am addressing your first question, I am going to ask you to clarify your comment about new silos. I am not sure where you are going with that. But you are right, we are going to be focusing and prioritizing collection of the metrics which we are required to collect, and that is the entire cone of the ice cream cone. I think that what is exciting about the time we are in and in the evolution of healthcare and the way we view healthcare is that as we move increasingly to value-based payment systems, we have to start thinking about the quality of the outcome that the patient is experiencing, not with regard to the performance of each of us as providers but the performance of the entire ecosystem, what is the outcome that the patient experiences. And while I do not have direct control over that and historically I just get rewarded for what I do, increasingly we are going to be asked to work in systems to work in collaboration as a team across all of the providers that a patient will encounter and even to some extent into non-healthcare collaborators as well. I think this is why I am so pleased and surprised to see so many of you are already working in this space. It is cutting-edge stuff but it is absolutely in line with the mission of healthcare. We are in healthcare to help our patients.

Yes. So thank you for that clarification about the silos. So yes, there is the danger of creating more silos because a lot of the solutions for data really in healthcare across the board but including the solutions for collecting PROMs are narrowly focused and specific once again to a particular healthcare silo, a specialty, a procedure, and this is something many health systems have suffered in and analogously have suffered in trying to integrate as a system even within their electronic health records. There are certain EHR products that are targeting specific specialties and specific hospital departments and integrating those has been difficult. Where I think there is hope is that there are solutions that can ingest the data from all those different sources and re-integrate it so that you get a unified view of your data across those silos. That is really the heart of what Health Catalyst® does. We are not the only ones. Some health systems have built their own "data lakes". It is challenging, it is complex, it is unfortunate that we have so many silos in healthcare and that those silos have historically been reflected in how we capture data but many entities are working hard to solve that issue and are having a lot of success.
Alright. We have time for one last question or comment. We have a comment saying, "Trying to coordinate the care is limited to the what is allowed under Medicare." I think that brings up a good point in terms of coordinating care on those defined outcomes. So times when regulatory issues or other process or legal issues get in the way of that coordinated care, so those defined outcomes. Can you speak more to that?

Yes, I think if you are talking about charges and costs, there are some longstanding rules that we have to watch out for, but I think if you look at the new payment models that Medicare and CMS have been working on and rolling out for the past two years, they are not without their flaws and challenges but the direction of travel is to encourage coordination across the healthcare silos because that is what offers a few things. It offers efficiency and better management of potential duplications, it offers a smoother journey for the patient and it offers the opportunity to ensure that we are delivering the outcomes where you want to deliver to the patient and that the patient deserves rather than the care at some point falling through a crack between those silos. That will continue to be a challenge as Medicare and CMS and the regulatory space continue to evolve but I do think the overall direction is towards encouraging us to coordinate.

Alright. Thank you very much, Dr. Simpkins. We would like to thank everyone for joining us today. And to remind you that shortly after this webinar, you will receive an email with links to the recording of the webinar, the presentation slides, and the poll question summary results. Also, please look forward to the transcript notification we will send you once that is ready.

So on behalf of Dr. Carolyn Simpkins, as well as the rest of us here at Health Catalyst®, thank you for joining us today. This webinar is now concluded.