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[Meeting will begin shortly- please stand by].

This is regarding problems and cancer care and providers and healthcare purchasers we want to identify topics for those joining us we want you to understand the delivery and conceptual and analytical and practical approaches to address problems in cancer care delivery and development of NCI research agenda. We have a lot to accomplish in the next 60 minutes and have on the line a group of researchers, providers and research and business people who spend a lot of time thinking about healthcare quality and we see the great people on the call, on the left side of your screen. So in the interest of time we will for go the round Robin of introductions and thank you for taking time out of your business and important schedule to join this discussion on developing methods to measure importance in an accuse and chronic care setting and we have Michael Rosen, a psychologist from John Hopkins medicine who is in the areas of team work and patient safety as well as simulation- based training, performance measurement, natural decision making and quality and safety improvement. Moderating the session today is Dr. Steven Taplan and a primary physician and researcher and chief of the research branch at the national cancer institute and I will start by summarizing the case study which is the basis for the presentation. We will spend about 15 - - [no audio]
Okay, I lost my audio. Could somebody please let me know what the call in number is? I have been cutoff.

>> After high school she went to college and upon graduation got a job in Washington D.C. as a television producer and at the first job not offered insurance and needed a job and took the position and eventually she changed jobs and got insurance and decided to see a doctor and she did a physical examination which included a pap smear from a new physician 5- 6 years after she left her primary care doctor

in her hometown and two weeks later she returned for the follow- up visit and had cancer and needed to see a gynecologist for biopsy and evaluation and she saw the gynecologist and the biopsy was performed and she had cervical cancer and needs a hysterectomy and needs to see an oncologist and had to wait a month because the schedule was booked. The primary care provided got her a more timely appointment. The surgeon eventually sees her and affirms that it is cervical cancer and also recommends a hysterectomy and says they are crazy and inaccurate and she convinced herself she did not have cancer and avoids her doctor and she had a radical hysterectomy and radiation and chemotherapy and since the surgery the care shifts to her oncologists and works with patient as a patient Navigator and regrets she did not know about conserving her over for future conception.

>> So the problem, we can think about this problem as an individual problem and failure of the physicians or failure of the patient to follow- up and get the care or for the physicians to follow- up and get to the woman who may have had an abnormality or we can think about this as a challenge to groups and a challenge to the system so the question is whether you can construct a system which would help that doctor avoid the failure of not contacting a patient with an abnormality or help the patient understand they have an abnormality, they need to be seen. So what we want to do today is take advantage of the fact that Mike Rosen is in the measurement and team and asking him so Mike how could as you measure these teams and the functioning of the groups of individuals either in primary care or oncology or in gynecology and help them understand what is working and what is not working in their setting that would make the system a success for both the patient and the providers?

>> Point out in this case there are problems in the follow- up so that is one issue but there are also problems in the actual administration of care, a woman who doesn't completely understand what is going on thinks that her physicians are wrong, seeks multiple other opinions so there are other aspects of this case in which how the team worked together and how this individual is managed could be done differently and the care could be better for everyone involved. So I want to turn now to Mike and have him I think we are going to - - we usually take a few questions at this point from people and I don't know if there is anybody who wants to raise their hand and have a quick question but given the interest of time let's turn to Michael and come back to questions at the end so think about your questions on this case and how you would look at it from your perspective and let's go to Michael and have him talk about measurement of teams thinking about this case.

>> The case is great and stretches our idea of teams and stretches really our ability to kind of map them effectively and measure them and improve them so there is a lot of really interesting things about that case and I'm not going to pretend to have all of the answers but some kind of methods and strategies we have been working on and my work is in hospital care settings but some ideas can hopefully translate, some will be familiar to you, some may be a little more

novel and I don't believe I have control of the slides.

>> Just say I will forward when you want to go forward.

>> So you can go to the next slide so what we will do today is really a couple of things in the next couple of minutes here very quickly is we will kind of describe the decision- based framework and designing team performance systems and described in the chapter as read ahead and what is a measurement system is multi method and multi source measurement and try to understand how they relate to each other and given the nature of the problem, the task, the team you are dealing with and how do you construct a system that is going to capture the most useful information about that team and we will talk about really one example of what we are doing here that is a little bit novel and using social sensors to try to capture the more on going, continuous nature of team work and some of the things that are difficult to capture with high kind of temporal resolution in a hospital setting. I think those are some of the real big challenges across the spectrum of healthcare. Next slide, please.

So just very quickly, the framework we use to kind of pull together measurement systems is based on answering these three fundamental questions about the nature of measurement system. The why that you are measuring, what purpose do you have, of course drives and should drive all your other decisions but really the two fundamental ones are why do you try to measure something and what are you trying to capture. And for team work there is lots of lots there to choose from in terms of what you will actually measure. So we will talk about the very specific tradeoffs across these and many reasons to measure for evaluation to provide people feedback for development and growth. We know that works. To answer research questions. Of course team work is measured for certification in other areas and pieces of that being implemented in healthcare, not nearly as robust as other industries but it meets analysis and understand how people have to coordinate their work to develop tools and structures and better support the work and lots of methods and we will talk about those specifically, the context of measurement matters a lot and do a lot of this in learning environments and a lot with simulations because they help provide structure. That is useful for measurement like on the job simulations and site simulation is a very strong approach we use. Then of course issues of when the time and frequency, all those things but we will talk about very specific, all those are laid out in detail in the chapter and we will talk about specific champs of tradeoff. Next slide.

Fundamentally there is a limited set of methods you have when you try to develop or measure team performances and all have tradeoffs right, so there is self reports which we are familiar with and have strengths that they are familiar, they are flexible and you can capture many attributes of team work with them. They have been proven to establish validity and not every tool but in principle. They have challenges of temporal resolution and the burden and given the nature of healthcare being under such a kind of resource crunch. The biggest resource being people's time and they don't have time

to fill out surveys frequently. Observation. Obvious behavioral markers and we will talk about those in detail and strengths or objective and evidence behind certain tools and method in general, really tough to train and maintain reliability with those tools to get good data out of them sometimes and of course they are very expensive in terms of labor cost to actually have observers and do those and cost prohibitive and those are the gold or standards and self support and observation and we are working on more as a way to complement the methods is fill in some gaps and we can't ask people to fill out surveys and can't afford observers collecting data but can we put data to use and collect other types of data to help us make sense of what is going on. This idea of social sensors which we will dig into is automated collection of social interaction data. I will talk about more in detail what that is but capturing dynamic continuous data relatively low cost to do this. The data is very lean and rich descriptive data of what is happening but we need theory and methods and I'll talk about that. And the challenges are privacy and trust given what is going on nationally and given what goes on in healthcare and having trust in a system like this can be difficult. And the last is activity traces and these are similar kinds of as we do our work especially in settings described in the example, their tends to be traces of those and e- mail exchanges and use of an E HR entry, that can be used and that can be coupled with these other methods to have a more complete picture of how people are coordinating work and work and getting work done in a system and teams. Next slide please.

So I will do this quickly because it's basic stuff and lots of evidence and lots of research documenting what do you measure in terms of team work competency in terms of team work processes and in terms of things that impact the quality of how a team works together and these are examples and a lot of research on the collective team cognition and collection of variables and this is team knowledge stock, the task characteristics and how the team is put together and of course the organizational context, the technology they use, the culture, all of those things. And of course how people work together, lots of ideas and what communication and leadership is and how teams plan and specify goals and manage conflict and all of those things relate to the task outcomes and how well they learn and improve over time. Next slide please.

I think we the go through this quickly and click through this and lots of data supporting that. In general in a general sense theoretical sense we know it matters and team cognition and great support that matters to team effectiveness and keep clicking. Behavioral competencies and affective competencies too in terms of cohesion and lots of data that this matters. Next slide please.

But the trick then is of course getting from the general concepts and operationalizing them and it matters and difficult to identify a situation where it may not matter in terms but we found it's really important to think about these in kind of a hierarchy between how abstract they are and specific they are with kind of the general

competency being something that applies in all situations across all teams down to the very specific level, doing a task and can be more concrete about what for example leadership means in this given situation. Go ahead and advance one, please.

So for example the idea of leadership, you can look at that in surgery and in trauma teams or tools that fall at different places along the abstract hierarchy and a great tool with massive amounts of validity evidence behind it from college calls OTAS and it's meant to apply basically to any surgical procedure, any surgical team. That's great for general and the challenge of course is building and maintaining reliability for that tool, training is up to 20 hours. And I worked with people that have gone through that training and still had difficulty maintaining reliability. On the other spectrum you can get down to a specific task that is going on for example trauma resuscitation, it's procedural and scripted and pull out what leadership may mean in the task and easier to train and easier to have consistency and next slide please.

The challenge is then you have these expectations performance and are they general and if they are general you put demands on the reader to discriminate and make judgments about what is going on. If they are very concrete you can put some of the knowledge burden on the tool and making the items that are rated very, very specific. The challenge then, this is what we have done and actually I'm excited about a tool we now have in place where folks around in surgery around briefings that folks have incentives tied to and we have done that because we looked at a very, very thin slice, an important slice but a very thin slice of team work and tried to create standard expectations around what should happen there.

The challenge is of course those places that are really highly task specific kinds of critical team work interaction and things like handoff and patient encounters or things like briefings and debriefings, you can script those and create easy to use transportable tools, generalizable tools with high reliability but it's -- it only applies with a narrow slice. What we are missing when we do that is having a way to capture everything that happens outside of that slice. So that is what I'm going to talk about next is the system to balance what you can measure in a very predictable time and place of critical team interaction versus what you can measure based on the more fluid dynamic team interaction. Next slide please.

This is social sensors, we are really in the infancy of exploring and found very promising results so I'm going to talk to you about pilot work we have been doing and where we will go with this and what the challenges are. Next slide please.

Is there we go. So this is an example of what we mean by social sensors and this is the hardware we are using and there are a lot out there. But includes things like infrared or blue tooth sensors for proximity or two people face- to- face and interacting and microphones to capture aspect of the conversational dynamics and talking or not and pitch to ascertain are they emotionally charged

conversation or not and you can actually record actual audio off of these things although we don't do that. There is lots of other sensors like temperature and accelerate and capture workload and people exhibiting at any point in time. Lots of data and we will talk about what it is and what it looks like and how it's useful in a second. Next slide please.

This data already there is good, not a lot but there is some very promising initial evidence that these sensors are able to pick up signals that matter to us and matter to teams so that that model we talked about there is input and moderators and media and outcomes and we need study to detect personality traits by patterns off the sensors and a couple of studies have done this now and that is interesting for healthcare for a number of reasons and hospital reason and professional is important and they come from about 2- 3% of the population of workers so it's really useful to be able to identify stable characteristics of people based on how they interact with other people. There is also some initial neat, interesting findings rounds team processes. They are very reliable with observational measures and a cheap, low- cost way to replace what previously had to be done with human observers in some situations and high reliability. A study used to classify tasks that teams are doing in a situation with a pretty high accuracy. And also a little bit of evidence of an association between metrics pulled from the data and kind of outcomes we are interested in and a PACU environment and length of stay which have very critical for the perioperative services and length of stay in the PACU was strongly associated with dynamics of people interacting with other people. And in an interesting way as a relationship of course we don't understand why and so there is a positive relationship and the longer folks are the more time they spend interacting face- to- face the longer length of stay is, we don't know why that is. Of course there is lots of different reasons that could be and one challenge of the data is coming up, with theory and the context behind it. So next slide please.

So the pilot work and we are currently going through with this, it's a part of the project to redesign an ICU environment from a system engineering perspective and one piece of it and we have done micro validity studies and a strong association between the sensor data and amount of time people actually spends in proximity talking to one another and actual more traditional social network survey methods and high correlation between those two things and working a lot on data visualization techniques and it's complicated and make sense of it and talk quickly and they will be really key. There is great data from experimental literature with a team interaction mirror and provide people with non- value judgments and provide people better depiction of how they are working together and coordinating their efforts we will be able to self regulate and improve performance based on a non- value- based feedback on how they are interacting together and hope to pursue that and working towards that now, next slide.

This is one representation of what is going on and 12 nurses on

ICU and 6 1/2 hours of data and we will go through what it is. We are struggling with ways to visually represent this and working on of course analysis techniques too which I will talk about but this is actually just as background this figure comes from a piece of software designed to visualize genomic data but wells well for any relational data. Next slide please.

So what you are looking at here is along the outer edge and this little segment on the outside of the circle is one person over time and that is 6 1/2 hours and all those little lines coming off that are relations to other people in a network sense. So that is a detection by the blue tooth sensors and they were close to one another at that point in time. Next slide please.

In addition you can add in things besides just were they close to each other and add in things about their speech patterns. Next slide please.

What we are looking at here is over a ten- minute interval of a six- minute period and total number -- proportion of the time is talking versus not and some other metrics you can pull out in terms of conversation but the basic ones are proving to be useful enough at this early stages and next slide please.

And there are again with this it's interaction data you weave information about people and this is nurses and what is left out are environmental sensors. You can place those in the environment so you can see where interaction is happening at different points this time and start to build up this profile or process map of what is happening in a unit. But next slide please.

So these are -- this -- these bands are heat maps for information about individuals within a given team, one of these is activity level based off the accelerometer and standardized across people and then there is volume level of their speaking standardized within people, went person and some are loud or quiet talkers and that is individual controlled variable. Over time you see lots and lots of data and that is useful. This is stuff that is tough to get from observation alone and as you see the challenge is kind of context, how do you make sense of this? We have very, very pretty pictures of what is going on but what does that mean exactly. Next slide please.

So there is a lot of research that needs to go into in and getting a lot out of it and we have hints this can be valuable and a lot of technical work to do on sensors and analysis work that needs to be done to look at predictive algorithms for data and working on the idea of decomposition for the data and if you think of the slices of time as kinds of a matrix you stack the matrix up over time and you can do ID composition on that like doing factor analysis over that time series of graphs essentially and you can from that you can get behavioral templates and you can then associate those which we are working on now which doesn't exist yet but working with statistics so how is the team performing at this point in time and what does that mean for process measures, what does that mean for patient outcomes and stuff we care about. Psycho metric work that needs to

be done. Again lots of rich, descriptive data and what does it mean in terms of measuring a construct as we think of it and lots of work. And on the social front and people who trust the data and people who will be receptive to it. Lots of things going on. Again, nationally, internationally, looking at especially activity trace data which we did not talk about much but mining, that for a similar interaction patterns they discussed in the sensor data same for activity traces and a lot of trust issues to overcome there and interventions, how we make use of this. Lots of potential for feedback we think, lots of potential for alerting displays. You can easily come up with metrics for the systems so if something stars the system you can alert folks to come in and we may not be able to tell you what is wrong but something atypical and leadership needs to ask some questions about what is happening so that is the direction we are going. Next slide please.

And our initial next steps in this area and again this is IC environment and it has applicability and lots of other settings but we are working on feedback displays for providers, the data visualization we went through is not going to mean much for the front - line clinician and coming up, with displays people will get useful information out of individually, as a team, in a unit over time, that type of stuff and doing validation studies against traditional observational and self report measures of team work and work flow currently and predictive piece I talked about with developing some inference tests around time series and graphs. That is really what we are working on right now. So I know Steve do you want to turn this in? I think the question we want to ask is kind of what Steve started out with the initial case study that is that a problem of teams and coordination or is that a problem of individuals?

>> That's right. Thank you.

That was great. It's exciting things coming online and making it I think beginning to be the kinds of things we can actually do in practice when you are talking about observational pieces. So somebody had their I think Andy had their hand up in the beginning with a question after I presented the case and I don't know Andy if you want to bring that case up, Andy.

>> Hi, Steve.

>> Hi.

>> No, I do have you know a few comments about the case but.

>> Go for it.

>> Well, you know, it's not clear how much team work was going on in this patient's case because it seems like her care has been more sequential as opposed to more coordinated and it's not clear to me whether the team was engaged in a discussion about the case from the get go or her cancer team or whether it was you know first a referral to the oncologist and then obviously there was an access issue for that oncologist which probably was one of the things that began to erode some of her trust in the team. And then perhaps then obviously a communications issue between the oncologist and the patient so that she who is obviously an educated and intelligent

person from the background presented, you know, the team failed to sort of or the team or the oncologist, not clear, failed to communicate to her what the malignancy might be and also seemed like maybe this wasn't put into the case discussion or simply didn't happen, there wasn't subsequent communication follow- up with the patient to assure that she understood what was going on and what the follow- up might be. And once she got into her care there weren't any comments really made about the team approach. It sounded like surgery radiation chemotherapy than a coordinated approach to her care at least in terms of how it was presented and communicated to her.

When I think about that component of cancer team work, I think about how well the team communicates with one another and with the patient, how well the team is collaborative, you know, in terms of how they work together. And then the third thing is how well they coordinate, you know, the kind of care they are providing for the patient and it just seems like at least from the very brief sketch that was presented to us there were pieces lacking among all components of the team's care and I don't want to monopolize the conversation so I'll stop but I just, you know, I thought Mike's presentation was excellent. I'm not sure we have enough insight into how that team really functioned to be able to sort of know where the break down was but it seemed like the break down was at multiple points.

>> I think that is right, Andy, I think there were multiple opportunities for break down and I think what I wanted to raise and what Mike's presentation raises is can we rethink the problem and begin to do just what you said and are there ways you could construct it to make sure every abnormality of a pap smear is known. Mike, if you were going to evaluate the team in the primary care team that was there and want to evaluate communication, how would you think about that problem? How would you think about the problem of is that primary care team, if the goal is to make sure that everyone gets followed up and all care gets completed, how would you evaluate that primary care team? What are some metrics we might be able to do because some of them are not district verbal communication you pick up with a sensor.

>> Right, absolutely. And that is - - that is the difficulty I think when you look at the big picture of what happened in the case study and I know there are folks on the line more skilled in this than I am but thinking multiple nested teams working on this person and think how they are working individually as a team focused on a certain set of tasks and may have the over all arching goal of keeping this person well and doing different things, right. So almost defining what those kind of key process pieces or outcomes would be and then you can almost get task outcomes for latency of following up with people and process measures for how that information is flowing within that team perhaps. A lot of what we are doing in ICU environment around redesigning the system, so it's a measurement problem but really it's about structures that are in place too and

that is easier to measure than process sometimes and it's a lot more influential on performance as well. So how are we getting information to people, right? They don't have a process to follow - up or they don't have an easy way to detect who needs to be follow - up on is what we find in ICU is a problem making sense from data and lots of data it gets lost, the important signal is lost and putting structures in place to highlight those. It's really about forming some expectations around what requires follow- up and what doesn't.

>> You are bringing up the sort of classic structure process outcome piece as a way of thinking about the team and you can think about this first primary care team of what are the structures in place and do they have a way of assuring that the result of every abnormality gets back to somebody or not so that could be, that is a structure question and then the process is questions you can begin to ask about are who is communicating with whom about that abnormality and is every abnormality followed up.

>> Absolutely.

>> So I agree with Andy there is a lot going on in the case and we don't know how much is going on with the team but we want to begin to ask that. Anybody else have questions or comments? Pardon?

>> This is Ingrid if you can hear me.

>> We can hear you go ahead.

>> And I'm struck by the fact we are referencing the team and yet as I read this it wasn't clear to me that there was a defined team. So even in Mike's piece he noted that a team is a bounded group and it wasn't clear to me that we knew who the team was or that everyone would say that they were a member of the team.

>> Yep.

>> And even past that that there was a shared understanding of what timely care was like within the team and if we say there is a team.

>> Right.

>> I think you can look at this as a timeliness of care issue fundamentally and many things that went wrong but what is acceptable and the shared goal in terms of timeliness of shared care?

>> That is a great question, Ingrid and, Mike, could you measure teamness and if a team exists and the importance of relating their work to functional outcomes.

>> Absolutely. That is a phenomenal point Ingrid and we can walk any place and ask folks in a care context who is on your team and you will get answers from no one, I'm on a team by myself or everyone says we are on the same team but doesn't help with care so understanding the basics and compensation, who is on your team rolls and how people are inter dependent in goals, right. So my experience, when teams fall down in situations like that it's on the absolute basics which is roles, goals and dependencies and what do we achieve and how does our work go with other people's work and who is responsible for what. Clarifying those issues clears up a lot of team work problems.

>> But as a researcher, Mike, how do you go in and find out where

a team exists or not exists and do you do that? Do you have metrics that say here is the team, there is the team or these are the two teams involved in this case?

>> MIKE: There are lots of different approaches to that. One thing we find ourselves doing frequently is almost mapping teams in an area especially in a hospital setting. The boundaries are permeable and composition changes frequently. Trying to actually understand who that is and mapping that out and there is different ways to do that like a team task analysis so you have some representation of how things work or how people think that work and develop metrics off of that, things like there is lots of ways to measure sharedness of understanding or models of our roles and kinds of goal congruence measures. There is lots of ways to do that. So I would start with the mapping of what the team is at least supposed to be.

>> Great, other comments? Questions?

>> I guess I want to push on this further. So we can think of a team as defined by the people who participate in it or think of the role of the teams where we say, well, every patient such as Mrs. App is likely to have a PCP, a gynecologist, an oncologist and let's say one other primary role. I'm curious whether and I don't know if there are practitioners on the line, whether or not you think of teams in that way, so when you have a focal patient I think well this patient has a team defined by these four roles and fill in the blank for the patient specialized and therefore that is the group with which I need to engage in team work with, which is different from a team, right, you can have team but there is team work and coordination.

>> Yep.

>> That is a great question and Andy do you have a comment on that?

>> ANDY: I do and it's a great question because when I see a patient and say, you know, I'm happy to be on your team and I'll collaborate with your other providers on your team, it's exactly what you just asked Ingrid, I will communicate with the patient's primary doctor and the gynecologist and make sure everybody is aware of what the issues are and seek input when needed except those people for that particular patient even though they are members of the patient's team they are not the people whom I consider to be my regular team. In my regular team would be the actual people putting together the cancer plan so that might be since I'm a radiation oncologist that may be the medical oncologist or the gynecologist or research nurse for example and we would meet weekly and talk about the patient and put together a plan for the patient and figure out who will do what and when and how it will be coordinated. Those are the people with whom I meet so regularly that we really know, begin to know how we are thinking and feeling about things and we really work together well and we really coordinate the care well for the patient, so that is the sort of the patient's cancer care team I would say who you know take that responsibility of you know collaborating together and then communicating with the patient very seriously and that is a

different team than you know what the patient might consider her entire medical care team which I guess is a team in a way. But it's not as tightly linked from the communication standpoint because her primary care doctor could be 30 miles away and it could be somebody I only interact with once or twice a year. Whereas the cancer team where people I work with everyday.

>> This is a really important point they are bringing up right now and something we talked about a little bit, the idea of cancer care as a multi team system and there are multiple teams involved in care and the primary care team and the radiation therapy people and the surgical team and may or may not be a palliative care team and we talk about the coordination among team, not really individuals. But I wonder if you would comment on metrics of multi teams and how do you separate out and decide the functioning of each of the teams as I think as Ingrid talked about within themselves so in primary care or radiation therapy and the functioning of the system as a whole and the relationship between those teams, is that something you are thinking about when you think about measurement?

>> We think about it. If we do anything about it though I think. We are starting to get better in more tightly and much more tightly coupled areas, most of the kind of patient streams are through put areas in the hospital and more tightly coupled than what you guys are talking about right now. But we started looking at those types of metrics and a lot of interventions to improve how different it is coupled within a hospital. But I'm sure maybe some folks will have gotten much further on real world kind of multi team system measurement than I have.

>> RICK: I'm from ARC and first of all that was a great presentation, I really enjoyed it and it's fascinating novel approach to looking at ways to measure, which is an incredibly challenging area. But one of the thing and another piece that also adds to the equation, looking at the whole concept of patient centeredness and often sometimes the teams are really not dictated by the medical system, they are dictated by the patient. For example, I'm not in the oncology world, I do primary care but if I have a patient with a newly- diagnosed cancer, from their mind that is the most important thing that they need to deal with. Thus, their primary care teams becomes secondary. Their oncology team becomes their care team. So not only is measurement of all of the care coordination and transitions in care and who is on the team, what is the boundaries, what are the roles complicated, it's also complicated in the cancer world by the cancer diagnosis. Because that tends to drive patients to certain teams. And that is where their focus is. For example, that patient who, you know, who had an abnormal pap smear and realized it was serious and I need to take care of it, that was driving but until that came to light, you know, some of the missed opportunities were driven by the fact that the patient didn't quite get that what they had was serious in nature. So once they find out, for example if they have a brain tumor and they are going to neural oncology that service is their care team.

>> Personally that is what we struggle with a lot is we get a lot of lip service to the patient and member of the care team but that is a really tough dynamic and in some ways it's a lot different than traditionally we look at a team that has one of the defining properties of shared goals and while patients and care teams do there is also goals that conflict realistically and looks like negotiation sometimes than how you would typically look at team work. So it's a really complicated dynamic when you start thinking of teams and the context of where does the patient fit and how do we design teams around them to support them.

>> Good discussion. It is raising, again, the issue of what is the composition of a team and Ingrid's question in the team where the patient has a primary care provider and gynecologist and a surgeon and her diagnosis drove who those people were and I think maybe that is what Rick was getting at, that drives who they are. But I think it also raises the question about whether, in fact, they are a team and nobody outside would necessarily recognize those people work together in an inter dependent way to define teams and it may identify there was a radiology and therapeutic team that did operate together but this accumulation of the others that this case, particular case drives I think would be -- it would be a stretch to say there was a team there that actually was taking care of her.

>> Can I add that.

>> Go ahead.

>> Another issue that comes up with that and not being clear of who is on the team and you don't know who is leading the team and seems as though everyone potentially was either a leader or follower and waiting to be led by another. And that.

>> Who is on first.

>> Yep.

>> And that could be either the leadership vis- a- vis the patient specific issue or could be the leadership of the team overall and in any event the team was failing.

>> Yeah.

>> I just want to point out to other people that Rick was just on the line are HR Q and doing work this team work and assembling metrics of care and we are hoping to work with them to begin to do that and maybe we can say something about what is available to others now, whether they can go and find this list of metrics of team care.

>> Well, thanks Steve. Right now there is nothing available publically and we are in the process by probably September of 14 A HR Q will be publishing an Atlas of instruments around team- based care measurement. So what we have done is we are doing a fair amount of research and looking at what instruments are out there. We have also developed a conceptual model and had members of Mike's team on there and Roy was one of the advisors and had a lot of people doing team- based care and team- based care measurement advising us to develop a conceptual model and there are models out there but ours is specifically looking at primary care and what are primary care teams and what are some of the most salient domains in primary care

teams and how can those be measured. So we are going to have an interactive Atlas for both researchers and for quality improvement efforts in primary care, so all the work is pretty much bounded by primary care and of course we get into the same role and boundary issues on how do you define primary care and our oncologists engaged in primary care or gynecologists and you know what are the boundaries. And that is a big challenge for us when you are looking at the measurement of teams.

>> That is great and Rick will come back in July and talk about those measures so that is a little panel tidbit to say stay tuned and he will come back and talk with us more and maybe the Atlas will be out by that time and I just posted what the schedule is for the remainder of the sessions that Veronica has led and organized and wanted to thank her for pulling this together and thank Mike for being patient as we worked through the technical issues and for all the preparation. I think it's -- you did a great job of going through the issue of measurement in a quick way. And thank you all for participating and we hope you will come back and we would love to see you and we really it helps us to hear your discussion and your perspective. And we look forward to the next talk which is in March and we will talk about cooperation and team performance and thank you all again and thanks to Veronica and I think we can call it a day.

>> Thank you.

>> Thanks Steve.

>> Thank you all.

>> Good- bye.

>> [Webinar concludes at 3:02 p.m.]