LIS and in the subject line, type the word subscribe and in the body of the message, type subMedicaid-SCHIP-HIT and then type in your full name and Nicole has given you a message there and you'll receive a message asking that you confirm that you want to sign up for the LISTSERV.

Next slide. Okay, I just would like to introduce our two speakers. I will first introduce Dr. Kate Cusack, who is, you will see, Caitlin Cusack but she goes by Kate [and has told me she is not related to Joan Cusack and John Cusack, the actors], but Dr. Cusack is HIP Program manager at NORC, and she brings a unique combination of skills to her position there, including a robust clinical background in women's health. She has broad health IT experience and experience in project management, health care consulting and patient safety. At NORC she oversees many of the activities of AHRQ's National Resource Center for Health IT, providing oversight of the project and acting as the lead for the value and evaluation team. In addition, she is a member of the teams that provide content to the National Resource Center Web site and to a team that directs the technical assistance for those receiving AHRQ funding.

Dr. Cusack is a board-certified OB-GYN with 8 years of clinical experience and holds a master's degree in public health from Harvard in health policy and management and she'll be doing the bulk of the presentation; she'll be speaking second.

But first, to sort of give us an introduction to today's presentation, we have Jessica Kahn who joined CMS in September 2007 in the Family and Children's Health Programs group, Division of Quality Evaluation and Health Outcomes. She currently serves as the project officer for several large grant programs including, [and many of you on the phone may be familiar with her] including the Medicaid transformation grants, the high-risk pool grants and the emergency room diversion grants. Her background includes a master's degree in public health with a focus on reproductive health and evaluation from Tulane, experience in the Peace Corps in West Africa and working with USAID in the field of international health. She logged many years in state government with the Louisiana Office of Public Health and the Maryland AIDS Administration so consequently, she identifies strongly with the state grantees and tries to champion issues while also being a good steward of federal grant funds so I will turn it over to Jessica for the overview and then we'll be hearing from Kate.

Thank you, Erin, hello, everyone. And thank you, Nicole, I now have control of the slides. I hope everyone's having a good afternoon. I see a lot of familiar names of those of you who are on the call right now and I'm really glad to see we had a lot of participation, lot of people registering. AHRQ has been really gracious to focus the content of this webinar primarily on the needs of the Medicaid transformation grants though it's much more applicable as well to other Medicaid and SCHIP HIT activities but where we hear from you all the most is through those grants and so this is one of those feedback loops where you can go ah, hah, there was a point to mentioning that we needed this or didn't understand that. So it did translate, hopefully.

So I just wanted to give you an overview from our prospective at CMS on the evaluation of these activities and then Kate will go into much more detail and how to and all that good stuff.

Okay, from the CMS perspective—and forgive me for those of you who have heard me say this over and over—but the Deficit Reduction Act, which is where we got the funding for the

transformation grants, requires the evaluation of these grants looking at two things: cost savings to the Medicaid program and the clinical outcomes that are improved as a result of the project and then obviously describing specifically how the funds were used, so those are pretty broad and not very descriptive. So we've really tried to help the grantees hone in on return on investments: what is it, what does that mean, showing costs savings, how do you define that and clinical outcomes, where are you going to see that impact down the line but equally important to us, at least at this stage is in evaluating the implementation of these projects, these HIT activities, to be instructed to the other states. There's a tremendous amount of peer-to-peer sharing going on right now even by the CMS direction at the own initiative of many states, which is a wonderful effort, and that's really the heart of what these grants are supposed to do as demonstrations so we are interested in the challenges as well as the successes.

Whether or not you're a current Medicaid transformation grantee before you put me on mute and think, oh, this call doesn't apply to me, it is important for you to think about evaluation of your HIT activities in the context of CMS funding as well for three reasons. I decided to narrow it down.

One is obviously local stakeholder buy-in. They want to know what they're going to get, what those state funds or other funds, foundations or grants, if you're doing this through other means, and how they're going to know that it was worth it. The other thing is for future CMS funding through MMIS matching funds. If a state were to apply to CMS through an advanced planning document to use some of their MMIS enhanced match funds to do something around HIT, obviously starting with the claims database as a focal point but then building out, bridging out for ultimate interoperability, CMS' expectations through this central office and the regional offices, is that your approach is outcome based, that it's going to have a strong logic model, that it's going to be clear where you're going and how you're going to know when you get there and we're trying to really be unified from the tech side and the policy side when it comes to this.

And then, in the vein of optimism, were we to get future funding through Congress for more transformation grants or some similar grant programs, I don't think this kind of evaluation requirement's going to go away, this outcomes-based approach is here to stay. And as we're all learning about HIT within the Medicaid settings, these grants are a great way to add to that knowledge base.

That said, I'd like to be completely forthright so that nobody's rolling their eyes and going, these expectations are unrealistic, there is actually a mismatch in the timing. The Medicaid transformation grants were rewarded in 2007 and theoretically, their final evaluation reports are due in October 2009, if nobody has a no-cost extension of their grant period of which many of them will, that said, that's only 6 months off of the end of a 2-year grant. That's not a long time and you might not actually be able to show some real project outcomes in such a short period of time—there won't have been enough time between when the project went live and that evaluation report or you might actually tweak the project after it's gone live a little while, you know, to make some improvements and so on so that might make your outcome evaluation difficult. And then some of the key measures that you're looking at, clinical measures or otherwise, might not show an immediate impact in 6 months. So we understand that there's this mismatch between the timing and reports but it's still important to do it anyway and we've been talking a lot amongst the grantees and myself about some interim measures that can be reported

on at that period of time and then discussing the importance of still tracking these impacts to outcome measures down the line, both for the benefit of your continuing funding and sustainability and if there were ever additional funding that you could build upon the evaluation outcomes you would at that point be able to demonstrate.

So, that's kind of our prospective on it; whether you have a grant or not, it's still important to do it and to look at it for the short term so that you can look back on the past 2 years and be able to show your stakeholders which I guess includes CMS, what you've been able to accomplish but also what it took to get there. We don't want to lose that thread and think this is all going to be rose-colored glasses.

So that's it for me and I'm really pleased that we have Kate to talk about, in much more detail, the how-to and I hope you all benefit and ask her good questions. I unfortunately have to ring off a little bit before 3 but I hope there's a good dialogue afterwards.

Okay, great, first, thank you very much for inviting me to speak. I want to give a little bit further background into the work that I've been doing. I've spent the last almost 3 years helping the AHRQ Health IT grantees in their evaluation efforts and a lot of what I'm going to speak about today comes directly out of those experiences with the AHRQ HIT grantees. We ended up developing an approach to evaluation methodology around evaluation, how to teach evaluation based on direct feedback from the grantees and the struggles they were having around evaluations so I'll give a lot of examples of the interactions I've been having with those grantees.

Do I have control of the slides? No. Can I go to the next slide?

You have control, Kate. You just use the arrow up top.

Oh, the arrow up top. Sorry, I was using my down button.

Okay.

I could go to this slide. So, just an agenda, this is kind of what I was asked to speak about, you've already just heard a lot about evaluations so I'll give why to evaluate from my perspective and then I'm going to go into how to approach evaluation health IT and how you can develop evaluation goals and metrics and the methods around that, leading into how to develop a plan and some of the common barriers and pitfalls to health information IT evaluation.

So why evaluate? Historically, from a health IT perspective, in the early days when people were implementing these systems, we did that pretty blindly. There's an absolute assumption that we would put in these systems and that would be the magic cure for all of the ills in medicine. We would definitely see improvements in clinical processes and better quality of care, and improvements in patient safety and efficiencies and reductions in costs. You can go to the next slide.

And even that the zeal to get these systems implemented, nobody really thought about evaluating. You don't typically see this in other industries. In most other industries, when they implement something, they're interested about their impact in their outcomes but definitely evaluation has taken a back seat and a big part of this is in (a) the assumption, you know, these

were just were going to have those impacts and (b) implementations had proven to be more difficult and costly than people had thought they would be. It is the rare project that ends up on time and on budget and then once you get the systems in, getting people to actually use them has been pretty problematic.

So the primary focus has really been on just getting the darn systems up and running, working to get people to use them and not really thinking about that impact outcomes and doing evaluation. And so the loss to the field of health IT is really been immeasurable.

If you've done any work on trying to research what these systems cost or what the true impacts are, there's a lot of anecdotal evidence, little bits and pieces here and there—if you go to the academic literature, most of the studies that are published on the impact of these systems come out of very few organizations, most of them have home grown systems and it's really difficult to know how to apply those systems to every day practices and what's going on in the rest of health care so we've lost the answers to what these systems really do cost. We've lost that financial clinical impact and we've also lost (as was alluded to before), it's not really clear the best way to implement and what the best practices are. So we really have to evaluate in order to know what's working well and what hasn't worked, to know what it really does cost. If you go out and say I'm going to put in a new prescribing system, it's actually really difficult to nail down what it's going to cost you at the end of the day.

What is the real clinical impact? Not just what we think is going to happen but really what is happening out in the real world and again, what is the ideal way to roll these systems out and is there one model for all or does it change based on who's implementing and where and big versus small?

In addition to kind of thinking through what has been lost by not doing evaluation from the broader global perspective, we also lose things on the individual's perspective. In thinking of terms of what an evaluation can do for your individual project, evaluating an implementation is going to help inform that implementation. As you're putting things in and thinking about what's going well and - how you might change course and you may increase resources or decrease them - what's not going well; doing evaluations helps you to win over later doctors if things are, with the earlier doctors going really well and you're evaluating that and you know what's going on, you can share that information with people who are resistant to use this system and maybe convince them to use it. And again, all that guidance and support for future practices around building best practices and building up lessons learned.

Also, from an internal perspective, evaluation is great in terms of publicity. These make great stories in the newspaper and for your organization about hey, we implemented this system and we're seeing reduction in medication errors, things like that. It also helps to increase your accountability and credibility and this kind of information that you're gathering as to the impact of your system can help them form a sustainability plan.

We're going to move on to how to approach evaluation of health IT, defining your project evaluation goals, metrics, and methods. And this is a process that again, we've developed over time in working with the AHRQ health IT grantees and there's been a lot of lessons learned on our side on how best to teach these things. There's a lot of information out there about how to

evaluate, a lot of theory on it and when we were working with our grantees, we were finding that a lot of that theory wasn't accessible to the people who had to actually do this so, what I'm going to describe here is a very practical approach in thinking through evaluations.

When I'm working with groups, I think the very first thing everybody needs to do is to have at least one single brainstorming session to think about what it is that they want to measure and do this at least once. Now, I've heard a lot of you are farming out your evaluations to other people to do but there should be at least one meeting where everybody comes together and talk about why you want to evaluate and what you're going to measure. So to start off, we recommend that you do a big brainstorming session with your own team, the people who know the project, the people who are intimate with why you're getting this done, bring together the evaluators. We think it's really important that you bring to the table somebody who is from the technical side—and this gets missed a lot—but you do want to have somebody involved in the early stages of planning that knows the technology that's being implemented really well and you can also think about bringing other stakeholders to the table who have a stake in what you're actually going to evaluate.

I also encourage people to bring to the table other people that are in your organization or that you know of that are already collecting data. We're all having to collect data for a variety of things; the data's already being collected [and it is] is a nice, easy source to tap into in your evaluation efforts; it's kind of cheap data to get because you're already collecting it.

So, again, even if you're having others conduct your evaluation, somebody from your team that knows the project well and is a stakeholder in your project really needs to stay involved. I'm going to say that about a million times: conduct your first meeting as a brainstorming session to clearly define what you want to measure and from that, once you know what you want to evaluate, your evaluation plan and design will flow from that.

So, in your initial brainstorming session, you want to start off by describing what you're implementation is, what the project is—this sounds silly to people every time I say it, but it's amazing how different people's perception of what you're trying to accomplish is so you really want to say up front to the entire group, this is what we're doing and this is why we're doing it and this is what the actual implementation is. And you're already got this in your project proposal and so you just want to put it out there so everybody on the team knows what the project is really about.

So the next thing you want to do is make clear to the entire team you've gathered what the goals of the project are and again, this kind of sounds silly and like a no-brainer, but everybody tends to have different reasons why they think it should be done. You should have a unified idea of what the actual goals are. Your goals of implementing may be that you just are interested in proving patient safety or improving quality. I've actually heard it all in terms of why people are implementing systems, from we want to stay ahead of the curve technology wise, we want to be seen as leaders and we just want to techy. People, of course, want to implement these systems because they think it's going to save them money and increase efficiencies so there's a variety of reasons . So upfront, you want to make clear to the entire team what the goal of the project is.

And the reason why this is so important is when you want to do your evaluation, what you'd like to have the evaluation say is at the end of the day, our project was deemed a success—so you want to think through, what do we need to do to say that our project goals have been met?

The next one is a recurring theme here: you wanted to find the goals of the evaluation and yes, these goals of your evaluation are different from your project goals. You want to be clear on why you're evaluating, again because you want to be able to say at the end, we've done an evaluation and we've met our goals of the evaluation and it's been a success.

So, again, many, many different reasons why do evaluations. What I hear the most is people do evaluations with the work I work with because their funders are requiring them to do it and I think that's probably the case here. And that is a very legitimate reason for having to do evaluation.

You may want to evaluate your project because you just want to show what the value has been of your project. It may be that you want to evaluate it so that you can share lessons learned with others. It may be that you want to evaluate so the next time you do a similar project, you can share those lessons with the next project. We have a lot of people say they want to evaluate their projects because they want to publish what they've found in an academic journal, a very valid reason for evaluating. And then for others, the demonstrator return on investment.

So, the next thing is to start thinking about what you would like to measure and this is where the real brainstorming session comes in and this is a great thing to white board and just start throwing on the board everything that people can think about that if they measured it, they could show whether or not they had met their goals for their evaluation or their project.

At the outset, I encourage people: don't think about what you can and can't do, just get things down but they do need to map back to your goals.

And so, in thinking through the kinds of things you can measure, we've categorized them into this list of categories here. The sorts of things you can measure can be around clinical impacts or the impact of your system on clinical processes. You might want to be measuring the interaction of the provider with their adoption rates and the attitudes towards the system. Looking at what the patients are doing. You can look at the system's impact on your work flow and again, looking at impact of financials.

So I'm going to just give a bunch of examples of the kinds of things you might want to look at, again, thinking through what your goals are. So, for example, if I'm implementing an e-prescribing system because I want to reduce the number of medication prescribing errors I see, then what I want to do is look at the reduction in errors because if I show a reduction in errors, then I've shown that my goals have been reached. So, other examples of clinical impacts of your systems might be a reduction in lengths of stay, it might be something as simple as improvements in hemoglobin A1Cs or reductions in NVL.

You can also look at impacts on your clinical processes; for instance, improving guidelines or quality measures, seeing increases in vaccine rates. I am a gynecologist so I had to throw in seeing an improvement in mammogram rates or people are appropriate. [Other examples are] increase in foot exam rates in diabetics and improvements in documentation. You might just

want to look at, are people actually now completing allergy lists, doing med reconciliations and improving their documentations?

Around provider adoption and attitudes, I think these make great evaluation studies, too. Be looking at how the clinicians are interacting with your system. You can look at provider usage trends and whether or not those are improving over time.

If you're doing, again, a new prescribing system or physician order entry system you might look at the present orders entered by a provider versus say, a clerk. For e-prescribing, you might want to look at the percent outpatient prescriptions that are going out electronically versus continuing to be on paper.

If you're implementing a documentation system, look at the percentage of notes entered electronically versus being transcribed. You might want to look at provider satisfaction trends. We've got good evidence that in the beginning providers hate these systems but with time, they do increase their efficiencies and they like them over time, so that makes a good study.

Around patient knowledge and attitudes, of course, there's so much buzz right now around patient-centered care. The intent there is try to involve patients more in their care and increase their knowledge, so if you're implementing one of those kind of systems, you might want to be measuring how good is the patient's knowledge pre- and post-implementation of these systems. Are they improving their ability to understand the medications they're on, and how they're used? Are they increasing their knowledge of conditions they have? Are the increasing their knowledge of treatment plans? Is any of that improving?

And around work flow impact, these systems are supposed to improve efficiencies. Some of the things you could look at to see if your system impacted work flow: What's the rate of pharmacy call backs, if you put in a better prescribing system? If you are putting in these electronic health records and so forth, there should be an improvement with patient wait times that come back for repeat visits. The demographics on that patient should already be available. They shouldn't have to fill things out again, so that should improve patient wait times—so you could look at that.

What are entry systems? Is there an improvement with time to administer medications because things have become electronic? Again, these systems are supposed to increase our efficiencies and, therefore, you should be able to spend more time with your patient so you could do work flow analysis to look at time spent per patient.

In terms of financial impacts, doing a total return on investment study can be really difficult because it's often hard to tease out where the costs are across the system to get a true sense of costs. There are some really straightforward things that you can measure that will show a financial impact of your system. A really great one is to look at if there's any change in claims denials.

Another one is looking at paper – performance payments from pairs and whether or not that's getting better. The increase in prescriptions for generic medications versus brand medications, and one of my favorites is, of course, looking at the reduction in transcription costs; it's an easy thing to measure and a lot of cost savings there.

Reduction in costs to manage paper—there's always this hope that we're going to reduce the number of FTEs that are working by making everything electronic so that's another one that you can look at.

So, all of those are very, kind of on-the-ground impacts around clinical impacts and financial and so forth. I've noticed that a lot of the grantees are doing data exchange and on these measures are different than the ones I just discussed. It's the hope ultimately that exchanging data will impact clinical care. In our interactions with grantees doing data exchange, what they've let me know is that those impacts on clinical outcomes and so forth are very hard to define with the data exchange projects. So, for what we recommend around data exchange, we bring it up a level: have you been looking at where you're exchanging the data? Is it between providers and laboratories and pharmacies?

You can go to the next slide. And looking at very straightforward, simple things around the exchange of the data itself so when you evaluate data exchange projects, you can look at say the number of transactions that are occurring, even the number of data elements that you've been able to make available to clinicians to view is a nice thing to evaluate.

Usability of a data exchange system I think is great—usage rather. Looking at the number of registered users to this system. Then looking at the number of first time users and then looking how often people come back and use the system.

Data exchange is supposed to help us reduce the number of duplicate tests that are going on so you can evaluate that reduction and then do a cost-benefit analysis of what that saves you by reducing those duplicate tests.

So those are all ideas of things that you can be looking at in a number of different areas in health information technology. One of the things that I've noticed with our grantees is that there's a tendency when writing evaluation plans to go straight for the numbers and I think that is human nature, it makes sense. I'm going to put in a system, make things safer, I'm going to measure by how much things are safer.

But you really want to throw in some things that you're going to measure from a qualitative basis and make sure that those don't get left off. Ignoring qualitative data risks seeing the big picture of the project.

So, the thing about qualitative studies is that it's a robust way to give a evaluators the ability to understand how users are interacting with this system and effective is the qualitative studies actually gives sort of more interesting things to say. The data is easier to understand to a wider audience. When people are reading academic evaluations and looking at those p values and the Chi squares and all those statistics, it's hard for many people to understand what the point of those studies is. So these qualitative studies generate studies and anecdotes which are really interesting to a broad audience and often really resonate with stakeholders.

So, again in your brainstorming session, when you're thinking about what it is that you want to be measuring, make sure you give some careful through to qualitative studies as well as those quantitative studies.

The other thing we strongly encourage when you're doing evaluation is to think about ongoing evaluation, to not just think in terms of we're going to start a study at this state and we're going to end it at this state and that's our data and we're going to analyze it and we're done.

An ongoing evaluation throughout implementation and post-implementation gets some really good information and also helps you inform what you're implementing. So, set up a study in which you will periodically go to the users or the stakeholders or the implementers and say, again, what's going well, what's helping to facilitate what you're doing, what do you think we should be doing differently, and what could we do better? I—we have requests all of the time for these barriers and facilitators and lessons learned. People are really interested in knowing, well, if you put in that system, what would you have done differently the next time so that we can learn from it? I think that barriers and facilitators at this time are pretty well known but people still want to hear about what happened with their individual project.

So barriers can be organizational, they can be financial, they can be legal, and facilities are strong—facilitators, strong leadership training, community buy-in. So try to think that through as you're crafting what you're going to measure and think about.

Finally, in looking for measures and things to measure, I strongly encourage teams to again pull in people that are already collecting data within your organization, within your facility, within your project, so that you can tap into the data that you're using. I've run a couple of brainstorming sessions with grantees where they did bring people to the table that were collecting data and these people get very enthusiastic by the idea that the data that they're collecting might be used in a different manner.

For instance, I ran a brainstorming session where they brought the person that was doing all of the coding for claims and got very enthusiastic about the things that this individual thought they could get back out of their billing system that would be impacted by the implementation. So those people are nice to bring to the table, the people collecting quality data already, and to think through, in thinking through the goals of the evaluation, the project, is there anything already being collected that can help in your evaluation efforts?

So now, in theory, you've got a whiteboard that is filled with these different measures that are going to help you evaluate your project and now you need to narrow them down so you're working on choosing your final list. Again, I can't say this enough: you want to be measuring things that when you've completed the measurement will help you reach your evaluation goal and help you say that your project has been successfully implemented and your goals of your project have been implemented. The first thing I ask people to do is to look at that list of things that they're considering to measure and pick out the ones that are not going to help you reach your goals. Those are easy to take out.

Next slide. The next thing is to consider the project's impact on each of the potential metrics. This is a thing that people commonly make a mistake on, more often than I would have thought. So people get very enthusiastic about health information technology and what it should do, again, that whole, it will improve clinical outcomes and quality and so forth. It's very common for evaluators to choose measures that they're just interested in general and aren't going to be impacted by the project itself. I cannot tell you how many times I've seen this; for instance, I had

a grantee who was implementing a pharmacy system but it was a standalone pharmacy system that did not touch on anything else in the hospital. They were very interested in looking at quality improvements and they picked out that they were going to look for improvements in flu vaccination rates. But their system wasn't integrated with the rest of the hospital and so I asked the question, how are you going to know what those vaccinations rates are and how is your pharmacy implementation going to impact those vaccination rates?

And they can't. It's a standalone pharmacy system; they don't know what's going on in the rest of the hospital and there was this idea that maybe the pharmacist would go look it up in the charts. Well, the technology being implemented was not going to impact that particular measure, there's no point in measuring it. So measure by measure, you want to ask yourself, is this project that we're undertaking, is it going to change this measurement that we're considering measuring and you actually can drop out quite a few there by looking at it that way.

The next thing to think about is how important these measures that you're thinking about evaluating are to you, your stakeholders, and the project. And we recommend that you look at measure by measure and decide as a group, is this very important for the group to do, is it moderately important, or not important at all? There is a tendency to overscope what you're going to do in evaluations, throw in everything and then not really think about, well, we actually really don't care what the results of this measure would be. So you want to start dropping off the unimportant ones.

Feasibility is a huge one. You really want to consider upfront which metrics you can actually achieve. We have lots of people that get down the path of doing something that is really, really interesting to them and very important to them to measure and then get halfway through the project and they realize they just don't have the resources to complete that particular project. And by resources, people typically think I'm talking about money but I'm also talking about who's actually going to be doing the work and the space and the time available.

I had somebody who decided that they were going to do a paper chart review. Paper chart reviews are very popular, very difficult, and resource intensive to do. And I actually had a case where somebody was going to review paper charts as part of their study but their medical records department was very small and they didn't have the space for anybody to sit there and go through charts. Although they had the person to do it, the money to do it, the time to do it, they couldn't do it within medical records, and there was no place to take the charts where they could actually go through it. They could not do a chart review because there was no space, and that's the kind of thing you need to think about up front: what is actually feasible to do. Again, we recommend [that] your team decide is a particular measure feasible, not feasible with moderate effort, or not feasible at all.

Sample size is a very important facet of feasibility. Everything can hinge on whether or not you can you're seeing something occurring and whether or not you then have enough frequency events to see an impact occur once your system is in. For example, I was working with a hospital in Maine and they decided they wanted to look at the impact of their system on mortality rates. I asked the question, what is your mortality rate here? You don't have that many beds, how often are people dying? We calculated that in order to see an impact of their system on mortality rates,

they were going to have to do their study for about 15 years—so again, thinking through, are we seeing this enough to actually impact it so it's worth evaluating?

So then what we ask your team to do is to take each of those measures that now have a 1-3 score for importance, a 1-3 score for feasibility and put them in this matrix we developed. And this is a great visual for your team. Automatically, anything that's in red which is not important, not feasible, you just take off the table and you get a bunch of your measures that are gone. The really nice thing about this grid is that it's a very strong visual. So the people who are really trying to hold on to something that they desperately want to measure that they really care about, they see it drop in the red and it really does end the discussion around that measure.

What you want to do is concentrate on the green box, the things that are very important and feasible, and the hope is that you'll end up with 3-5 items in that box. That's where your sweet spot is and that's what you want to focus on. If you don't get 3-5 things in there, you can go to box number 2, which is very important and moderate effort, but you'd like to not have to go into the yellow areas if you can help it.

Next slide. So then you now have a list of metrics that are rated by importance and feasibility. The biggest mistake I see people do is choosing too many things to look at. You are far, far better off doing one thing really well, showing an impact of your project, being able to say, hey, you're project has met its goals, than to try to do 10 different things and never get any of them done. I have actually had grantees who presented evaluation plans to me that had more than 100 different things that they thought they were going to measure and you just can't do it. It's better to narrow down and do a few things really, really well than to be overly ambitious. You can keep on the hand a list of secondary metrics beyond those 3-5 that if you decide you have time, people, financial resources, you could go ahead and address.

So the next is, what do you do now that you have your measures and how do you turn that into a plan? So you've got the what that you're going to measure, you want to do the "how", the "who", the "when" of doing those measures. And again, I understand that many of you are going to be having others do your evaluation, so this is the point in which the brainstorming session is done and the team can disband and say goodbye. You've got your 3-5 measures and now the people that are going to do your evaluation, they get to help figure out the rest of what and how you're going to get that measure done.

So how do you want to think about this particular measure for each one? What is your sample size? Think: are you going to use a control group or comparison group or are you going to baseline? Are you going to do a pilot? For qualitative studies, you need to think about are you going to do observation studies? Will you be conducting a survey? Will you conduct focus groups? Are you going to be interviewing users? What are you going to do to get that qualitative data? You want to consider what types of statistical analysis you're going to perform because that's going to help drive some of how you design your study and your control group and so forth.

We strongly recommend that when you develop that part of your plan and you have a plan for how you're going to analyze things that you have a statistician review your plan. They don't typically take very long and they can poke holes in what you're planning to do and save you a lot

of grief later on. It's definitely worth having somebody with a lot of knowledge of analysis look can that plan and do that reality check.

The next thing is the "who" around each measure. This is something I commonly see people miss. You do need to define who's going to take the lead on the project and that frequently happens, but I have had people forget to think about who's going to lead the data collection itself. This frequently will happen when you have outside evaluators; it's typically the people internal to the project that are going to have to get that data for the evaluators and so the evaluators sort of show up one day and say, okay, we need the data on X and nobody's been identified to actually get that data so you want to think through upfront who's going to get the data collection done.

You want to think about who's actually going to analyze the data. Think about once you've analyzed it, is it going to be presented? Are you going to write up a report or a paper? Who's going to take the lead? Who's going to review those papers? You really want to think this through the "who" for each metric.

Next. And then the "when." And this is another place where people forget to plan. You want to think about when you're going to target beginning collecting your measurements. You do want to give that consideration to what you're doing first, how long are you actually going to collect your data, and how long will the analysis phase be and when will you target completing the report. And frequently you're stuck with deadlines on the far end and so you need to work back from that end point. You know, if this is due on this date, how long is it going to take use to write, if we're going to write on this date, how long is the analysis and you back it up and unfortunately with evaluations. What you frequently find is you should have started collecting data about 6 months ago but you do want to kind of think through that time frame and try to line that all up.

And then you can pull together your plan. When you're writing out a plan, it's good to give an introduction: you're describing the actual project and laying out the goals of the project and the goals of the evaluation and the questions you want answered by that evaluation.

And kind of the outline of how to do that, you list the first measure. You've got 3-5 measures. List the first measure you're going to evaluate, do an overview of that measure, talk about the timeframe, the study design, whether or not you're going to have a comparison group, the data collection, the analysis, your statistical plan. And for qualitative studies, do a very similar outline: an overview, timeframe, talk about whether or not you're going to pilot, what the design is, what the survey is, include the survey questions, if you're doing a focus group, what are those questions going to be, how are you going to conduct those focus groups, how are you going to do the surveys, what's the timeframe and so forth, and lay out your plan for each of the measures in that fashion.

Next slide. So I hear that many of you are not going to be doing your own evaluations, you're going to be having others do that so you can take this plan that you've developed and develop a statement of work out of that. I think it would be typical for people to be handing off to evaluators just what you want to have measured. I have had instances where people didn't define that and I do think it's a mistake. I think the organization, the people who know the project

should tell the evaluators what they're interested in evaluating. In your statement of work, you need to be very clear about what your timelines are, when your deliverables are due, when you expect to have things back. You also need to clarify the finances and the resources and also be very clear up front who the individuals are going to be involved. Even if somebody else is doing your evaluation, you almost always have to have some involvement from within your organization be involved with that process.

Also, again, I've said this about 4 times now, you do need to have someone intimate with the goals of the project from your own organization be in regular contact with the evaluations. I have many, many instances where evaluators got off track from what the project goals were and when they came back with an evaluation, it didn't meet the original expectations of the people paying them to do that evaluation.

So, your partner in an evaluation can be responsible for developing the plan and you can put that in your statement of work. Asking others to conduct an evaluation without the ongoing involvement of your team is risky.

So common barriers and pitfalls—I think I've probably already hit on all of these. I'm just going to reiterate them. Common barriers to evaluation of health IT: it's typical to get resistance from those with the resources to even consider evaluations. I have many people come to me and say, yeah, I that this is really important but my boss doesn't think it is so we're not going to waste time with that, we're going to focus on the implementation.

Another common barrier: to get the right team of people together to decide what you're going to measure for your evaluations. You do want to get those implementation people, the technical people and the evaluators together in order to determine what should be measured. When that doesn't happen, you typically end up measuring paths that you probably shouldn't be measuring, that don't get measured successfully, that don't help you decide on if you've been successful and that creates a barrier.

Money, money, money, gotta say, a common barrier to evaluation. Easy to concentrate on the implementation itself, we see this all the time. Implementations do tend to be difficult to do, they tend to be costly, and it is common for all hands on deck to get involved with that implementation and put evaluation aside. By the time you really need to have time to think about evaluation, your baseline period is gone and some of the things you should have been doing, you didn't get done. It is very tough to balance those operational evaluations.

Common pitfalls: the number one pitfall is attempting to evaluate too many things. People get excited about this, they want to show an impact across many, many different things and they leap into this plan of evaluating a ton of different stuff that they just cannot get done. Again, 3-5 is what I recommend.

Another pitfall is to make assumptions on your data sources. This is where having somebody from your tech team involved becomes really important. People are always making assumptions about what these symptoms can tell you after they've been implemented. And I think the vendors have gotten us a little bit into this trap. We put in these systems and we know things are time date stamped and all of this data is going into our relational database on the back end. Getting

that data back out can be very difficult. Some of these systems have reporting systems, but many of them don't, and it gets very frustrating that the data is there somewhere and yet it turns out you're going to need a database administrator, somebody who can do crystal reports, somebody who can do SAS and all that together to get that data back out. So you want to make sure that you touch base with a tech person so that you know that what you're actually going to try to pull out, you can pull out of your system.

Another pitfall, again that I referenced before, is to not consider a control group or not baseline. Now, if you're just collecting data from point A to point B and have nothing to compare, it can make your results difficult to interpret.

I've got a grantee who is pointing out that when they implemented a decision support system in some of their clinics, they did see great impact on the quality of care that was being given, but in their clinics that they didn't implement, they also saw great improvements. What they realized was that because there was so much discussion about following guidelines in these systems that were going in, everybody got better at following guidelines and doing what they were supposed to be doing, even the places that hadn't implemented the systems.

Again, pitfall: not adequately planning around the people and the money and the space and the time you need for evaluation.

Other pitfalls that I've eluded to [include] failing to define your goals upfront and what you're trying to accomplish, small sample sizes and not having enough power, ignoring the quality of the data is a good one. It's not a bad idea as you're starting to collect data to set a timeframe in which you're going to look at the data that you're getting. It is our tendency to say, start collecting data over a month period, get it all at the end of the month to look at it but you might want to a week in, just look at what you're getting out of the system and if it's actually usable data. I have talked to people that got to the end of their collection period and realized that the data wasn't good enough to do anything with it.

Another common pitfall: confusing institutional goals with evaluation goals. This gets back to that idea that people think there are all of these great things to measure, we're going to measure a decrease in mortality rates, we're going to look at improvements in vaccine rates, and look at these great things that are great goals for the institution. But we need to make sure the project can actually impact them and that they're going to relate back to the implementation itself and not just the institution.

Next slide. So I'm going to just end up with describing some of the tools that we've developed that will help you do evaluations. And I understand that you guys were given a copy of the evaluation toolkit that the evaluation team at the National Research Center put together. It is designed as a work book with this whole idea of having a brainstorming session with your stakeholders and your team coming together. We have a ton of different measures in there with examples of what you could be looking at around clinical impact, process impact. All those measures are broken down by category, and we've given a relative cost to evaluating each of those. We've listed the data source where you can get your data for doing that evaluation and listed potential pitfalls around those. In the evaluation toolkit, there are project examples around pharmacy implementations, bar coding, and telemedicine.

There is a second toolkit we put together on data exchange projects, again, because looking at the impact of clinical data with the help of information exchange project is not really reasonable in the early stages of some of these.

The data exchange toolkit is a similar workbook format encouraging people to get together and brainstorm as a group. We list a bunch of different things that you can look at around data exchange metrics and there are examples around data exchange.

Also, we have put together a health IT survey compendium. We kept having people contact us, grantees, [saying] we want to do a satisfaction survey: Do you have a sample one? Our team would go looking for surveys that were in the public domain that we could share with them. It occurred to us we were doing this enough times, we might as well collect them and be proactive so we'd have a set so when people came to us, we didn't have to go looking, we already had them. And so we did a search for surveys available in the public domain, we got permission to link to them, and we categorized each of the surveys by the type of survey, the technology of the survey, the care setting and the respondent type. So with this survey compendium tool, if you wanted to do say, a physician satisfaction survey on e-prescribing in the ambulatory space, you could click on each of those tags and a list will pop up of surveys that are available in the public domain. There's a link that brings you to that survey. And those surveys, then you can use as they are or modify them or take a question and re-use them any way that you want so there's another tool that you can tap into.

So, I've included the links to each of those tools that I just mentioned and also linked the National Research Center for Health IT. We've got tremendous resources there.

And that's it. I can take any questions.

Kate, thank you very much. That was a ton of information you just went through in a relatively short time frame but thank you very much, you did a great job. I'll remind folks, you can type in your questions; there's a box at the bottom right of your screen. If you type that in and click send to all participants; you can also raise a hand and we can unmute you if you'd like to ask a question verbally. Or orally, I guess is what I should have said.

I guess everybody knew all of this, Kate.

Oh, no. Either that or nobody's on the call.

Well, we still have people on the call. Here we have some questions. Okay, it says we're here, we have a lot to digest which is sort of what I figured. In terms of sending out, there's a question, can we send the slides out to everyone on the call? Unfortunately, if you could send an e-mail to Nicole; Nicole, could you put up that slide that was from the beginning?

Sure.

That had your e-mail address on it.

What we need to do with these slides is make sure that they are compliant with some laws related to the federal government having things that are accessible to those with disabilities. So we can't

post it until we've made sure that the slides meet all of those regulations, but if you send an e-mail to Nicole and you see her e-mail address at the bottom of the slide here, then she can send them out to you.

Okay, we have a question from Patty Brennan. We're engaged in a data exchange project. We actually have over 10 agencies involved. Any thoughts about gaining access? Efficient ways to translate organizational buy-in into department level comfort and willingness to share data so thanks, Patty, that's a really loaded question.

But Kate, maybe you want to at least start from when you've got multiple partners involved, multiple agencies involved, do you have any suggestions on ways to bring that group together in planning the evaluation?

Wow. You know, when there's so many different groups involved, it makes me think that you have to start one group at a time and develop those relationships and meet one another and talk about your concerns and really emphasize the reasons why we want to do this. It's about patient safety and the greater good of improving our care of patients.

My preference is always try to get everybody together in one room but it just seems like too many there. But having those meetings and get somebody from each organization, typically, champion that's in those organizations and the most involved who can bring lessons learned back from a group meeting, back to the others. But you've got so many, you might have to do one meeting at a time.

Or the other thing—this is Erin—from my working with health information exchanges and coming from an organization actually that was working on developing a health information exchange, sometimes (and this may be true for evaluation), Kate, I'd be interested to hear your thoughts on it. Sometimes as you find when you're trying to develop the data exchange, you've got 2, 3, 4 kind of early adopters, folks who are willing to engage and sometimes you have to take kind of what you have and maybe get them together in a group and get them their agreement and then bring the others along as they're ready.

Yes, I would agree with that. Erin and I have done a lot of interacting with the state Regional Demonstration Projects that are doing this right now. They're interesting meetings when you get everybody together in the same room because of how different their projects can be and where they are at different points in their life cycle. One of the things that we've tried to do is get a definition around very easy things to evaluate that everybody should be able to do and try to get people to do that. So, Patty, with all of the groups that you're working with, doing a brainstorming, is there something really simple in data exchange that you could evaluate, such as numbers of users and numbers of repeat users, and amount of things that are transacted, along those lines?

We have another very good question which I think probably, Kate, both of us can speak to but it says you speak of data that's potentially already being collected by other organizations. Is there any resource providing a list of research organizations and information they collect and can we make that available in the public domain?

You want to talk about some work of the national resource center?

Yeah. Mike, we have a lot of data that we're collecting that is up at the national resource center, list of research organizations and then the other public databases that are out there. I guess I'd need an example of exactly what you're looking for to answer that better but at the national resource center, we're posting not only information that we're receiving from our grantees and that efforts that they have but we're also reaching the people that are publishing in other formats and having that information available in the resource center as well.

And the piece that I would add to that in, again, in one of the early slides and then a slide that Nicole had put up at the very end of the presentation today, we are trying to develop those kind of resources specific to Medicaid and SCHIP. And so, we're beginning to pull together, at least from a literature review, what is out there right now. To be honest, it's kind of slim pickings. But, as we are able to, in working with the Medicaid and SCHIP agencies, try to bring that information to light, we will be working on pulling that information together and making it available on the national resource center Web site in general. We're trying to create a space that is a good place for Medicaid and SCHIP agencies to go to find where all of this information has been gathered together specific to them. And Nicole asks, yeah, I would say go ahead and Mark Freeman may have something to add to that as well; he may know some resources.

Mark, if you want to introduce yourself or just give a brief background on who you are and I don't know if you have anything to add to this.

Actually, Erin, he's one of the call-in users so I apologize.

Oh, okay.

Could he type it?

Well, Mark, if you have anything to add, if you're still with us and you want to type in something. Are you there? No, okay. And Patty followed up as well and said one of her key challenges in working with the health information—the data exchange and working with the multiple proofs is in trying to get or create the partnerships between the intervention team and the evaluation team. I think that goes back to some of what Kate was sharing with us in her presentation; it's very different focuses but having those two teams engage with it. I think the intervention team sort of wants to be able to say, okay, you evaluators, go do your thing and make us look good but unfortunately, it doesn't work that way. Or doesn't work too well that way.

Yep. And again, the intervention team is typically so heads-down and just trying to get things up and going that they don't have a lot of interest in speaking to the evaluators. So the key there is trying to have some meeting together in which the evaluators can lay their case as to why evaluation is so important and because it shows up what the implementers have done. Once you get that dialogue going, you tend to go better, it's getting that first meeting. That's why I list it as a key barrier: it's getting that first meeting together with the evaluators and the intervention teams that's so tough. Just getting the dialogue going but once you've got it, you can typically convince people why it's so important.

Patty, do you have a phone connection?

She's one of the call-in users.

Okay. So, Patty's comment, which I think you all can see on the chat there is that they found it very helpful to have a "powerful other" present in the partnership and I think that that is pretty consistent with what I've seen from various partnerships as well.

Any other questions from the group? Are you all digesting? Still digesting.

We have a question from LaRa Kane. Is there a particular evaluation model that works better for health information exchange type projects?

LaRa, are you asking around what types of things to evaluate?

Well, I think – I mean you've created – the NRC has two evaluation tool kits, right?

Yep.

And so I think leads to the answer of LaRa's question that yes, there may be a sort of a different way to look at it for health information exchange.

Yep, and actually turns out that people doing health information exchange believe that very strongly, so we have the evaluation toolkit out first and when we were asked to help the state regional demonstration projects do their evaluations, we naively sent them our toolkit and said here you go. They protested very loudly so that we did create a totally workbook around health information exchange because the types of things that you're going to be able to measure when you do data exchange project really is different than those clinical impacts. Those other impacts are too deep. So, yeah, I would say there is a different model and we've outlined that in that toolkit for people.

So LaRa, I hope that addressed your question, unless you have a more specific question that you wanted to type in. And also, I was just reminded that the next one of the next sessions that we have, it's not scheduled yet but if you're on the LISTSERV, you will be getting information about it. [We want] to take this presentation to the next step, which is to take one or two or three of the Medicaid agencies experiences with their evaluation efforts, probably specific to the Medicaid transformation grant evaluations (but I think it will be applicable to all) so that they can speak to how they went about finding someone to do the evaluations for them, how they interacted with the evaluators and the process they went through to put their evaluation plan together so be on the lookout for that.

And in general, Kate, do you want to mention, there will be another evaluation teleconference not specifically directed at Medicaid but through the national resource center. Kate, do you want to talk about that briefly?

Sure. Yeah, we're presenting one of our national conferences calls. We have a whole series of these that we do through the national resource center. It is very grantee focused. Dr. Julie McAllen from Indiana University is going to do an overview of why evaluate. She gets a little bit more academic than I do because of her background. And then I'm going to do a brief overview of the evaluation toolkit but the bulk of the presentation is going to be from a grantee that we

worked with who had developed an evaluation plan which had many of the pitfalls that we just discussed today. We worked with that grantee using the toolkit to redo that evaluation plan and get it to be down to something that was scoped well and doable, and he's just going to talk about their experiences, start to finish, from starting with an evaluation plan that wasn't doable and getting to a point where there was something doable and being able to measure impact to their project. So very grantee focused.

And I believe that conference call is on May 15, from 1:30 to 3:00.

Yep.

We do have another question that came in to the host as an off-the-cuff question, an observation, that what we're talking about here is the ideal evaluation work flow or the evaluation planning work flow process but do you have any rules of thumb for mid-course corrections? You know, maybe you didn't follow all of these great processes to begin with, you've got your evaluation, it's already started, what areas would you zero in on, would you suggest, Kate, to zero in on, you know, to try to get your evaluation back on track if it seems to be going off track?

Sure. And I actually feel like I've ended up doing a ton of this with working with the grantees. They had these plans and then we worked with tweaking them. If you've already got a plan and you're already started and you want to think through it, are we headed the right direction, I would go sort of like through this mental checklist. I'd first ask yourself, are we measuring things that are going to demonstrate that we've met our goals, so are we measuring the right things? Look again, are we measuring too many and if you're doing a ton of them, it is worth now, dropping back to things that you can do? Thinking through, have we considered: are the right people doing this, do we have the right analysis, is it achievable, do we have the money, do we have the time and just kind of by measure thinking through, you know, are we going to be able to complete this? Once you see the writing on the wall that you've gone down a path with something you're not going to finish, the sooner you bail on it, the better and people are very resistant to doing that but then they're very thankful that they have. So if you see something that is just this huge elephant that you're just not going to be able to conquer and you know that in your gut now, it's worth just dropping it.

That's great advice, Kate. We do have a little bit more time, if anybody else has any questions they'd like to pose before we sign off. Up on the screen, Nicole has put the e-mail address for the Medicaid SCHIP technical assistance project as well as the direct link, the direct url to the Web site and below that is the link and the Web site, the general and national resource center Web site. So if you're interested, for example, in the evaluation teleconference that will be happening on May 15, you can go to the general national resource center Web site and there's information (I think it's towards the lower right-hand part of the home page) about the upcoming teleconferences, so you can register for that.

So, I guess the two reminders are be on the lookout specific to Medicaid and SCHIP where we'll have some agencies presenting their evaluation efforts and experiences. We don't have that date set yet but we're working that right now.

The other thing is to hear an AHRQ grantee, so not Medicaid specific but an AHRQ grantee specific experiences using the evaluation toolkit, you might want to tune in to the teleconference on May 15.

So, thank you all very much for your time this afternoon, I hope you found it very helpful as I did and we'll look forward to your participation in a future event. And thank you, Kate.

Thank you!