Are You Ready for EHRs?
How to Make that Assessment
November 15, 2005

BD-I'll go ahead and turn it over to our moderator, who's Meryl Bloomrosen with the eHealth Initiative, and Meryl is part of the National Resource Center as well, and she will be introducing our speakers. So Meryl, why don't you go ahead and take it away.

MB: Thank you very much, Brian, and good afternoon to everyone who's listening in. We're very excited to go forward with this national teleconference, and it's exciting to see the numbers of attendees continuing to go up, even as we get started. As Brian mentioned, I do work at the eHealth Initiative, and we are a member of the National Resource Center Team, and it's my honor to introduce to you this afternoon a speaker for this teleconference, Julie Vaughan Murchinson. Julie has over 13 years of experience in the health care delivery industry with a very strong background in working with and helping health care organizations in the areas of process redesign, service operations, and change management, specifically related to information technology implementation and use.

Julie's approach is unique and addresses the impact of information technology on all aspects of an organization and business model. Prior to founding the firm of Object Health, Julie was the Vice President of Services at TS Sciences, Incorporated, which is a leading provider of care management technology and services to hospitals and health care systems. She was at TS Science for four years and focused on advancing information technology use throughout the health care industry.

She was a Director of the Santa Barbara Care Data Exchange Project, where she developed the organizational approach and implementation strategy, as well as she was involved in designing the Internet-based tools that help facilitate clinical information-sharing and the advancement of industry standards. Prior to joining Care Science, Julie worked with the Lloyd Consultants health care practice where she specialized in applying information technology to administrative processes and patient care delivery.

From 1992 to '96 Julie was active as a CPA and a health care consultant for the firm Ernst & Young, where she worked on developing hospital and health systems operations and where she was very active in conducting financial evaluations and market entry feasibility studies for long-term care facilities. Julie obtained her MBA from the Wharton School at the University of Pennsylvania in health care and operations management. She earned her bachelors of arts degree in Business Management and Accounting from Franklin & Marshall College in Lancaster, Pennsylvania, and what I'd like to do now is turn the podium over to Julie. Thank you so much, Julie.

JVM: Thanks, Meryl. I appreciate that overview. I'm going to have to work on shortening my bio, I think. Thanks, everybody, for attending this call today. I definitely think that Meryl's overview of my background probably says to you that I've had a strong interest in how IT helps the process of health care, and Object Health specifically has been doing a lot of work, mostly with foundations, not-for-profit organizations, specifically safety net clinics and private practices. And in looking at how to think about IT as not a technology but everything else that needs to happen and to go right, to make IT work for your organization.

A lot of what I'll bring to the discussion today is that kind of perspective. You might find this talk is a little bit different than other talks that you hear about -- EHR and how to implement an EHR technology, et cetera, et cetera. I hope you find it somewhat enlightening, and feel free to actually hold questions, I guess, until the end, but if you have some questions in the meantime, I think you can type some in and we'll see if we can address those.

With that, I'll turn to the slides that you have in front of you. The perspective that I'll be speaking from today comes from a project that is still ongoing that's sponsored by the California Health Care Foundation and a community clinics initiative which is a program of the Tides Foundation called the Community Clinics EHR Assessment and Readiness Project. Essentially, this is a California-based project that's really looking at different strategies for EHR adoption among community clinics and health centers in

California. So those of you who are in private practice might say to yourselves, then why am I on this call? And I'll tell you that we did a lot of work, as part of the beginning of this project, to really understand how clinics differ from the private practice, both at the point of care and how things might differ there, as well as what the focus is of care delivery among clinics and how that differs from private practice.

So I will be, despite the genesis of this discussion, flipping back and forth between my perspectives on how private practice might be impacted by some of what I'm saying, versus how clinics are impacted. So I hope that works for you.

I hope the visual's coming up on everyone's screen. That is basically the visual that we're, I think as an industry, starting to stand by more and more every day. And that is that health information technology, in some way, really is forging a pathway to hopefully healthier communities -- healthier patients, healthier population for all of us. And in doing so, we're hoping that we can improve things like provider satisfaction and quality of care, and increased efficiency and things like that. And you've all heard these types of goals related to electronic health records or health information technology over the past few years, if not the past 20 years, as EMRs and the like have tried to make their way.

I think for the first time, our industry is really starting to gather around this as a quality issue. We're no longer saying "where can we" -- well, we are saying where can we save money, but we're also realizing quality is an issue, and we want to be focusing on both quality and cost.

Now on the pathway, there are a number of different health information technologies that people are seeing today and using today. There's a lot of talk about e-prescribing. That's definitely the low-hanging fruit in the IT industry today, and a lot of people are pursuing that. A number of folks, especially community clinics in the country, are focused onto these registries, and how to use databases and some technology to get a better understanding of populations that you serve, and using that as a base to improve quality.

Others have been very, very focused on computerized patient order entry, either in the hospital or outside in the outpatient care setting. All of these types of technologies are the types of functional assumptions that one seems to think about in an electronic health record today. So the message is that there are a number of technologies that get us to an electronic health record. Some of those may be steps along the way that are beneficial, and I think some would argue that all of those steps are beneficial on the way, and what we're really talking about today is the electronic health record and how to make that successful and understand your readiness to do so. But think about the electronic health record as a sum of a bunch of different parts and components that really enable you to improve your practice and improve the care delivered.

So in the industry, as we all know -- I wanted to define this first, just from my perspective -- but we all know that we've heard for years a number of different acronyms -- EMR, CPR, CMR, you name it, there's a three letter acronym that typically ends in "R" that has something to do with making patient records into some sort of digitized electronic format.

So in order to have this discussion today, I wanted to share with you my perspective on how we define EHR versus all those other three-letter acronyms. And I think the key piece that's different -- and I especially think about an EMR and how we've been talking about those for the last ten years, if not longer -- is that an EHR really assumes more longitudinal access to health information and it also assumes a certain level of decision support that has really not been tackled by most of your common-day EMRs. And the key component of this, if you're following a lot of what's happening at the federal level, is the importance of interfaces from outside your practice or your clinic into your EHR, in order to make that information longitudinal and in order to be able to look at lab values over the course of time, and trend them in a way that you might not be able to do with just having your system within your four walls.

So I think EHR has become kind of this sexy term for an electronic medical record, and not a whole lot more than that. But I think if you think about some of these bullet points, it will help you understand maybe how to think about your own definition of EHR and how everyone else is talking about it. So a lot of people ask why is EHR all of a sudden such a big deal. Besides being kind of the sexy term for the day, as we all know, President Bush and a number of other politicians have really put HIT on the forefront of the federal agenda. With the nomination of David Brailer and a lot of the activities coming out of the OMC, there's been a lot of progress around how to think about technology enabling the health care industry. And a lot of what we're going to talk about today is not really so much about the technology, but it all assumes that the technology that's in place is somewhat affordable, by having some sort of infrastructure in place to make your EHR connect to other systems in your community or across your region without having to build interface by interface by interface. And really we're focusing more on why is EHR right for you, and is now the right time? And how do you think about when EHR might be the right thing for you?

I'll just say -- I won't bore any of you because you all have read a number of different research pieces on this, I'm sure, but I always like to put together my favorite facts on why EHRs are thought to be the solution to the problem, and these are the problems that a lot of people are highlighting today as issues. And you'll notice that cost of care is definitely right up there as something that everyone's focusing on, especially when facts like 30 percent of the care delivered across our society is in some way unnecessary, or in other words, wasted. The process is broken, and if you start to understand that the PDR, that a number of you who are on the phone who use that PDR -- physician desk reference -- on a daily basis or at least have it, it's more than doubled in the last 20 years. How can one keep up with the pace of technology and information that's changing?

So I think that these kinds of steps are the things that people are really talking about and why technology is being turned to as part of the solution. Now a number of barriers to EHR adoption in the past have been essentially cost. That's the number one barrier, and I'll talk today a little bit about why we interpret cost as really being an issue, in terms of what people's expectations are for what a system can really do for them.

Clinician support has been thought to be a barrier for a long time. I would actually argue that more and more clinicians I talk to today are interested in and eager to learn about how technology can help them in their practice. I think the issue here is really starting to become one of is there enough support to properly support the clinician? And that's part of the problem. Obviously we know that products are constantly changing. EHRs have really been in their early phase development for years, because they have not gotten a low attraction and have not been able to mature with the needs of common practice, and I think as most of you probably know, there's a group called the Certification Commission on Health Information Technology, otherwise known as CCHIP, and CCHIP is working on creating some very baseline requirements for all EHR products, so that you as a purchaser, or you as a user, can understand whether the product that you're implementing or have today meets some of the minimal standards that the industry is beginning to set for those products. That's a very, very important development that is trying to eliminate this barrier to EHR adoption.

As we'll talk about today, the practice transformation issues are huge. This is not just about plugging in a server and booting up your system and using it to track your patients. There's a lot more about how practice may need to change, which I think is very site-by-site dependent, to afford the benefits of what EHR can offer. This is where I tie together clinician support and practice transformation as two very key pieces of this barrier argument. A number of vendors today, I think, would self admit that vendors have not necessarily developed practices to assist clinicians, especially those in small, private practices, to really understand the process changes that need to go on to support EHR use. And hence, there becomes a lot of frustration around how to get this done. That's a key piece of what we'll be talking about today.

Lastly is the low level of electronic data exchange. So this is the whole federal movement towards trying to create some standardized way of facilitating information flow from system to system, such that you as a private practice, or a clinic, won't have to pay for an interface to your laboratory, and an interface to your ED or hospital, an interface to your radiology center of choice. And that might be something that EHRs could plug into, again, a few years from now, to make that easier for you and make that more adoptable for you.

Now I want to go back to what I said about the cost issue. Cost has been a barrier for a long time, and I have some research here in a few slides where I'll talk about what some of the most recent research says about the cost benefit of EHRs. I think part of the issue around whether or not people are "ready" for EHR really depends upon what you expect from your EHR. And a number of different research studies have started to show that clinical automation, which is what most of us are really focused on, only reaps a small portion of the benefits, and we're talking more quantitative financial benefits than we're talking qualitative benefits.

It really only taps into a very small portion of the benefits. For those of us who have been looking for the return on investment from an electronic health record, we may not be seeing that today, because we're looking for clinical automation only, and there may not be enough benefit to really justify the cost of some of these systems.

There are exceptions to the rule, which we'll go through, but that's a common misunderstanding. A lot of the benefit that really is coming from EHRs is in the ability to have interoperability between EHRs and other systems outside of your practice or clinic, and then the holy grail of sorts, which is decision support. I think a number of organizations defined decision support very differently today, but I do think that decision support is essentially a way to really gather information and align with best practices to help any clinician using an EHR to make better decisions, based on how that EHR interprets the patient information being put into it.

Decision support is something that a lot of people in this industry are striving to get to, and there are obviously a number of road blocks in between, one of which is actually collecting enough electronic information to be able to develop the baseline for a lot of decision support systems.

The takeaway here is that until we have a little bit more maturity with electronic technology in health care, we won't be able to achieve some of the benefits that are capable of being achieved though an EHR. So we have to think about how to really understand what benefits we're going for on an organization-by-organization basis, in order to make an EHR a worthwhile decision.

I want to spend a little time on some of the cost-benefit research before we go into the readiness factors, so that you can be thinking about how you interpret what you're really looking for out of an EHR and what the research is currently saying. This is research that is taken from Robert Miller, who's a researcher at the University of California, San Francisco, who's done a lot of work on both private practices and in community health centers. The majority of this information is applicable to CHCs but I'll try to highlight where I've infused some private practice information and where there may or may not be a difference. I'd also like to refer everyone to the most recent issue of health affairs because Bob Miller and his team have an analysis about EHR cost-benefit in that issue that applies to private practices, and it's fascinating.

The first thing is that the initial cost of the EHRs continues to remain high. I think as we're seeing in the industry, that cost is driving lower and lower and lower, especially for some of the ASP models that are out there, who are essentially undercutting some of the other vendors. And just to articulate what an ASP is, for those of you who might not know, it's an application service provider, and they are a company or some sort of organization that would host the EHR for you. So you wouldn't necessarily need to have a server in your back room or have a technician on site who can maintain your network. You would essentially lease the EHR from another company or another organization.

So ASPs are really starting to gain traction, again, in the industry, after not doing so well about five years ago, and they are I think definitely starting to drive some costs down. But initial costs on a per-provider FTE basis are somewhere between $35,000 and $65,000 apiece. And that's a chunk of change. So I know everyone definitely is sensitive to this, but this is the kind of money that we're talking about in the current state, so I think this research was done over the course of the last 12 to 18 months.

Then there's the ongoing cost, which is maintenance, upkeep, et cetera, and that can be anywhere from $15,000 to $30,000 per provider FTE as well. Again, I'll say that some of the ASP models are really undercutting these prices, but this is kind of the average across all vendors -- vendors large, small, old, and new, you name it. Now, as we all know, from reading, one of the huge costs here is not necessarily a direct financial cost out of your pocket, but it is a direct cost in terms of how you modify your practice patterns to accommodate the implementation period. The provider time to actually be educated on and adopting the HR, and actually use it in a very useful way, can be anywhere from one to 12 months after implementation. And I think we've seen some clinics and practices who have taken far longer than 12 months, but I think one to 12 months is kind of an accepted rule of thumb. I think most researchers out there would say three months is a very strong implementation, in terms of impacting provider time. Six months might be more of an average. So you're talking about something in the one to six month range, realistically.

Obviously this varies a lot by provider or size of clinic office, and as much as the costs vary, the financial benefits vary as well. Now this is where clinics and private practices really diverge, and I think this is interesting. Private practices, according to Bob Miller's research, can generate an average of $33,000 per FTE provider per year, due mostly in part to increased coding levels. So this essentially means that private practices are having a lot of success emerge in the ability to enhance their revenue, by use of EHRs. This is very important because it's a direct hit to your bottom line, and it is absolutely making EHRs potentially net zero or very short-term payback of the system. So you can actually generate money from using the system. And that's a key finding of Bob Miller's part.

I'll say that for community clinics and others, this is not necessarily a benefit that clinics share with the private practice, and this is because of our reimbursement system, and how clinics are reimbursed differently than how private practices might be reimbursed. It all comes down to where your funding comes from. Is it coming from commercial health plans? State-run plans? Is it coming from federal plans like CMS or others? So you have to think about the revenue generation to really understand how an EHR might impact your specific practice. How many Medicaid or Medicare patients do you have? A lot of those questions really help you answer what some of the benefits are.

There are other efficiency benefits you can read here as well. I'll say just bottom line is clinics have still not really been able to make EHRs a financial success for them. Private practice, on the other hand, has been able to see anything from a payback period of two and a half to nine years -- nine years is a long time -- but two and a half years to pay back initial costs and the ongoing costs for those two and a half years, and actually then start to be able to generate revenue. And that's a huge finding.

I'll say though that what Bob really hangs his hat on is not so much the financial benefit, although he will self-admit that that's incredibly important to make this successful. But he also believes that the quality benefits are really key to helping us understand, a, how to improve the health of our patients, and by how to understand that there are cost improvements related to quality improvements. I think that that's, again, another holy grail that people are still really starting to understand today.

Most people who talk about quality improvement today are really talking about the low-hanging fruit. We want to make data more legible so that we don't have errors at the pharmacy, or spend all day on the phone with the pharmacists trying to correct scripts. Have better data, make it more organized, more accessible in some way, whether that's accessible at home by a physician, or potentially by a patient. So

those types of quality improvements are definitely extremely important. The types of quality improvements, however, that Bob would say would actually support that whole decision support thing that I talked about earlier are much harder, and require a lot more kind of planning and interoperability to achieve.

These are the types of quality improvements that we think about. We think about setting targets for asthmatic or diabetic populations, providing care according to protocols, all those things that are very controversial ways of practicing care in the health care industry today. But that's where EHRs can actually play a huge support role in supporting the process of care. As you can see, there's a number of different ways to think about kind of cost and quality benefits of EHR, and I think the important takeaway here is not whether you agree or disagree with some of the costs and quality statistics or directions, but what it is that your organization is really looking for out of an EHR and what of these cost and quality things are important.

Let's get to why you really brought me here to talk with you today, and that is about readiness. I think everything I just spoke about for the last half an hour really points to your understanding of your own readiness, in the sense of saying, of everything that I said, what's important to you? Why are you in this? Why are you trying to do this? I think that's a huge piece of readiness, and I'm going to walk through an approach that the project in California took to really trying to help organizations articulate their own readiness by allowing them to really understand what readiness means in a number of different categories.

Readiness is really important here, and I'm sure people have heard a million different statistics, but a source from HHS said that over 50 percent of EHR implementations have failed, or have produced mixed results. And that last piece just means they failed to achieve their goals. They haven't flat-out failed. Some people have challenged me on this number by saying that it's actually higher. I've heard as high as 72 percent. So you'll see different numbers in the industry, but I think the lesson learned is that a number of early adopters of electronic health records have not been able to achieve their goals, or have literally gone back to the paper process, because they haven't been able to succeed in making EHR work.

We do a lot of research to really understand why that is. One group out of Florida, called the Health Choice Network, is actually an application service provider for clinics and community health centers in a few states around the country. And their experience for why EHR adoption typically fails -- and again, this is primarily targeted at clinics -- but I'll say that there's a number of analogies that could be made to private practice. But a number of organizations may not really understand how an EHR fits into a business strategy. Why are we trying to use it, what do they want to get out of it, et cetera.

We've heard a lot about executive-level sponsorship and either the weakness or lack thereof, and also a lot about how organizations don't truly take the time to think about how an electronic health record impacts the care delivered in their organization. Every process they could ever think of. I've asked audiences in the past, how many people would be able to document every single process that goes on within their clinic or private practice today. Could you document everything that you do as a physician, your nurses do, your administrative assistants do? Is all that known today? I've had very few people say yes, I can do that. I would venture to say that in order to really understand how an EHR could impact your practice, it is important to have that level of understanding of what processes are going on in your organization, and what processes do you want to have go on in your organization. I don't mean to make this sound impossible, but that type of thought process, or that type of exercise, would really help bring everybody onto the same page about how an EHR is going to impact the organization. That involves a need for readiness assessments, setting expectations, et cetera.

I think a lot of these can hold true in a lot of settings. Cross-functional leadership is very important. When we talk about the need for physician input and driving requirements, the need for technical understanding of what that means, and the need for some sort of executive support to make sure that this

really pretty large project can make it through to success. You also see number nine, lack of formal training. I would say this is the number one issue besides doing what's kind of one through five on the other side.

Formal training and ongoing training on information technology and health care has not been something that has really been appropriately adopted on behalf of the industry. Vendors provide a certain level of training, but that's typically only the beginning of the implementation. We also need to be thinking about what the implementation needs are, or the training needs are, beyond implementation. This is typically something that we don't want to spend money on, it's not worth it, we don't have the money, we don't want to think about that. But at the end of the day, that training, especially in an ongoing way, can really help maintain an understanding of how to use the system effectively.

But I'll point to you to the last start, which is the bonus, I think. The Health Choice Network found that EHRs that don't meet the core provider needs, i.e. the core physician needs, will fail. So for those of you in private practice who are hearing about EHRs, and your friend next-door implemented XYZ systems and that's why you decide to go with that system, this might be an issue for you. Or for the clinic, who doesn't necessarily involve their physicians in the decision-making process, this could be an issue for you. So, and a lot of these are simple, and I'm sure you're thinking to yourself, well, of course, I get this.

But a lot of these things are not if not all one through ten plus our star of 11 points are taken into consideration together, at the same time, to really understand where your organization stands, you're at an increased probability for failure. Because we often talk about readiness in terms of readiness to buy an EHR, readiness to implement an EHR but we're often not talking about readiness to use an EHR.

Readiness to use an EHR is the question of what do you want to do with it, and a lot of the industry again is going towards this whole question about quality of care, and how to ensure that we're delivering better quality to specific populations or our entire patient population. If we don't have processes in place to support that kind of disease management, chronic care management, preventative care, whatever you'd like to focus on, then an EHR certainly is not going to help. It takes having a little bit of a process in place, and the technology to support those needs.

And as we talked about, organizational transformation is the big piece. A lot of people think, well, if I just buy the right EHR. If I buy the one that Dr. So-And-So got, or I know that this is the number one leading EHR in the country right now, so if I buy this one, then I'm sure to have success. That EHR may or may not really solve the problems the organization is trying to pursue. I'll give you one example. When we first started this project with clinics, the first thing we really tried to identify was how clinics are different than private practitioners; how is the process of care different, to really understand how an EHR might need to be different, to serve those needs.

What we found is the bottom line difference, although there were more attention to detail, the bottom line difference is that because of the way clinics are reimbursed through state or federal programs that focus on specific disease populations or specific types of patients who the clinic might be caring for, the clinic thinks about its populations differently than someone in private practice might think about their populations. I would say that one is not more advanced than the other, but the reimbursement system is causing clinics to be a little bit more population focused.

But to no one's surprise, EHR vendors today have really been focusing a lot on private practice, and private practice needs are highly focused on what happens at the point of care. How do you get information to the doctor at the right time, who else is involved in documenting information about the patient, like the nurse and the assistant, and how do you support the needs of those human beings at the time that they're meeting with a patient?

What we learned is that EHRs may be better suited or more consistently prepared to serve the needs of point of care, but may or may not be as mature as they need to be to really focus on this whole question of population health management. If you ask yourself what you're in this EHR game for, then that becomes an important differentiation, and you might be looking at a product that has fabulous point of care, but doesn't have any population health management. Or you might be looking at a product that's really kind of grown out of some sort of disease registry system and it's become a little bit EHR-ified. There are a lot of those products that are starting to bud out there. They might be much more powerful at population health management, but might not allow you to do all the great, incredible things that some of the EHRs that have focused on point of care functionality would allow you to do. So that's an important consideration, where we think about what is it that we want to do, and how does technology serve that.

I also say that we often just focus on EHRs as a technology problem, and I think we talked about this a few slides up. If we think about it as a technology problem, it will be a problem. I guess technology is a key piece of what we're talking about here with EHRs, but it's not the only piece. So having your technology professional be part of your team is absolutely essential. But having the IT person be only person who even looks into an EHR product for you is probably not the right approach.

I also just say that the experience that California Clinics anyway have had with practice management system shows that this is, in fact, an issue that has gone on in health care for a long time. Practice management systems, there are not very many that have really survived in the industry, and by virtue of that, a lot of clinics or private practices have purchased the same practice mammogram system. However, I think that those organizations use those systems in highly different ways and may or may not really understand the entire set of functionalities that that system has. With that as a background to where we're headed with EHR, I think we're all concerned to make sure that we don't repeat those types of mistakes that we've made with our practice management system in the EHR world, because it's much more costly, it's much more complicated with the type of data running through an EHR, and frankly, we just can't deal with that kind of heartache again. I think a lot of people did that.

I'll just briefly say that if EHR is the answer, what is the question? A question that all of you should ask yourself is what am I trying to get out of this, and how can I be prepared and ready to adopt an EHR that meets what I envision I really need this EHR for? Are you interested in understanding more about your Hepatitis C population? Or really trying to ask yourself some questions to right-size your human resources in the office? Or understand medication compliance among one or more populations, to really try to be able to understand how to help your patients be better patients for you, and improve their own health?

These are the types of questions that you should be asking yourself -- not necessarily these exact five questions, but what are you looking for? And lastly, once you figure out what you're looking for, really pulling together a strong team that can really help answer some of these questions, and find an EHR that meets the needs of physicians and other clinicians, and develop some processes that really help invite an EHR into your clinic or your private practice that works for you. I think how you read the three bubbles at the bottom is highly dependent upon what your structure is. How big is your private practice -- one, two, three, five doctors, more than ten? How big is your clinic? Depending upon how big your organization is, you might have a very different lens on how to put together a leadership team like this. But I think the key component is that you need to have input from multiple sources in order to make a good decision.

So with that, I'll go into the assessment that we created as part of this project to really help clinics answer the next level down of questions after everything I just went through. This project was really aimed at kind of two things. I'd be happy to talk more about it offline, but essentially we looked at two aspects of how to understand readiness of clinics for EHRs. One is we looked at clinic readiness, developed a self-assessment, which I'll talk through today, and also hosted a forum to really help educate clinics about readiness needs.

Then we looked at the product side and tried to understand how ready products were to serve clinic needs, and that's where I go back to what I said earlier about how clinics might be a little bit different than private practices today, and in terms of what they're really looking for out of the system. We did a little bit of a vendor assessment list there, and demonstrated some EHRs to clinics, to really help elicit those functionality requirements. It's amazing that once you sit down with five systems, or three systems, how you think very differently about what you might want out of a system, and how, if you had just actually thought about what you might want out of a system before you sat down with those vendors, how you might have looked at each of those vendors very differently from the onset. So we did a lot of work around the process of how you think about looking at vendor products.

Today we're going to talk primarily about the readiness piece, though. This is one of my favorite slides in the world, because I find that whenever we talk to anybody about EHR -- someone who's thinking about adopting, someone who feels like they should have adopted yesterday, someone who feels like they're not going to adopt for 20 years because EHRs are just never going to be ready for them, everybody has in their own mind some set of expectations that they need to be living up to in order to make those statements, and putting the societal expectation in check for them. This was a survey that was done of clinics in California, to understand what their planning process is going to be for EHRs, and I thought it was really interesting to look at the distribution.

If you see roughly almost 30 percent of clinics say that they're currently in some sort of planning process of EHR. This could be anything from having a committee together, to talking to vendors, to reading about EHRs in some industry mags and trying to figure out what they're going to do about it. But about 30 percent of the people said we're in that mode. Another 30 percent, all the way on the right side, said this, I just can't even imagine taking on. I can't even imagine even thinking about it for another year and a half at least. And a number of the responses in this category were well beyond a year and a half. So people who were really putting this on the back burner and saying, when the federal directions start to play out a little bit more, and CCHIP starts to certify EHRs and I start to really understand what I'm looking for, then maybe I'll start thinking about it.

Then there's the 40-plus percent in between that said, I don't know. Somewhere in the next day to 18 months, I'll think about this. What I think is amazing about this distribution is it's pretty clear that people are really divided on how they think about their own timeline for EHR. I'd venture to say that as people get farther and farther into the readiness issues around EHR, this timeline might actually start extending a little bit more. I think the message to you is wherever you sit right now, in terms of your opinions, don't worry about it. There are a number of people who are having a lot of success with early adoption today, because everyone is focused a little bit more on why they want EHRs. A number of folks will very comfortably be in that second or third round of adopting. So just because we're talking about readiness today and you might be in a hurry, don't think that tomorrow has to be today. Think about what's right for you.

To continue this kind of message for clinics, we developed a self-assessment that I'll share with you today, and the goal of this assessment was essentially to educate clinics, and I think also it's highly applicable to private practice, on what the requirements and success factors are for EHR adoption. This self-assessment tool is an Excel-based tool that we recommend kind of key leadership of physician practices or clinics sit down and fill out in a number of different ways. They might fill it out as a team, they might fill it out separately, and come back together, and compare their responses, but overall, what we're trying to do is provide some sort of in-depth assessment of readiness in several different areas that some people would never necessarily think about. But also provide just kind of a practical guide, to help everybody understand how to think about how EHR would work for you.

I'll walk you through what the design is, and that should be coming up on your screen now. Essentially, we go through 13 different readiness areas, and I'll share in excruciating detail what each of those 13 readiness categories are with you. We also have three different categories that we have each readiness

area broken down into, and those categories are what you read at the top: selection and contracting, implementation, and effective use. And the reason we broke this self-assessment down into those categories is because of that issue around how you might be totally ready to buy an EHR. You have the right person in place to think about your contracting, you totally have a culture where you're kind of set, ready to go, bring it on, I can do it. But you may or may not have thought about how you're really going to use it to achieve the goals you want to achieve. So hence, you're ready to select and go to contracting, but you may not be ready to effectively use the system.

Now let's say that you actually have thought through all the uses you'd ever want. You have all your people in place to contract. You may not have thought through all the processes and impacts of how that EHR is going to impact your organization. That's where implementation might come in, and implementation is very often driven by the vendor. The vendor will help you understand, okay, so based on how I want to configure this EHR, in other words, how I want to kind of customize it to what my practice or clinic does, here are the number of things I need to do, A thorough Z, all the implementation steps I need to consider.

Each of those actions or laundry lists of to-dos in each of those three categories is very, very different. So this self-assessment is broken down into those three categories. In order to force anyone who's using the self-assessment to think about whether they've thought through all the steps of those different phases, and there are some die-hards out there in the industry who would say if you're not ready to effectively use a tool, then you're certainly not ready to select and contract that tool. And I would actually say that, okay, that's true, and you probably should not be buying the EHR. But you might be ready in these different categories, in very different ways.

As you can see, the design of the tool basically is broken down into these readiness areas, and again there are 13 of them, culture being the first, and it's designed such that you're asked the question, or in the element section, given a description of what you should be thinking about. Then in the three columns following that, you should give yourself a rating, anywhere from one to six, and there are some descriptions here that act in two ways. One is it helps you figure out kind of where you are. I might not be a three, I might not be moderately prepared, might not be highly prepared, I might be in between. So maybe you're a four or a five. Maybe you're a 4.5. It helps you kind of think about where you are in the scale, to help to make the scoring of the assessment kind of give you some information back.

But if you notice, it also just provides descriptions to help you understand what some of the best practices or success factors might be, so that if you read the entire column of highly prepared, you'd have a good sense of what the model organization looks like. Now you might laugh, because who is the model organization? No one is the model organization. But it's always good to have something to shoot for, and to understand where you're really going. That's the whole design approach of this assessment, is to educate you on what we believe are the success factors, and to help you understand, in a very real way, where you might be in terms of readiness. I'm going to go through the 13 attributes and then give you a sense of what you come up with at the end of the day if you use this readiness assessment tool.

The first grouping of readiness attributes is alignment. And we're looking at organizational alignment -- how well does your organization align with the functionality and capabilities of what it takes to implement an EHR? How ready are you from an organizational perspective? So we look at culture, and culture is all the fluffy stuff. Culture is how nimble your organization is in terms of managing change, how much you practice what you preach in terms of delivering excellence to your patients and to your environment. How much of a team-based approach do you have, versus having a very individual approach within your culture? All these kind of cultural attributes can have a huge impact on how your organization is able to absorb the impact of EHR implementation and use.

Then there's the organization itself. This is kind of the infrastructure -- what types of methods or mechanisms do you have for communication, problem resolution; how easily does your organization kind

of deal with things in some sort of pre-programmed way, or at least have a mechanism to turn to? How much is the board, if there is a board, or a leadership team, really involved in day-to-day decisions like EHR adoption?

Also I would say that the ability to collaborate with external organizations is huge. How much has your private practice or clinic had to interact with the local hospital, with your laboratory of choice, with other specialist practices that you refer to? It's not only the ability to collaborate with these organizations, but to also understand how you prioritize the importance of those organizations in terms of the types of data that you need from them, and the types of data that they need from you. How do you manage that today? How do you want to manage that for the EHR? These are the types of things to think about, and that's how your organization interfaces or interacts with other organizations where data is really an important priority.

The next attribute is leadership. This one is, to most people, is a no-brainer, but I don't think any of us would really be able to look at a leader and say, you're either a good leader or a bad leader. We need to really understand what good or bad leadership is, right? We're looking at the characteristics of a leadership team or of leaders in terms of the ability to set a vision and to demonstrate a commitment to quality or cost or whatever the goal for EHR is. The ability of a leader to really align the entire organization, whether you're in a small practice or a large clinic, and you're going through a technology implementation. Everyone needs to have some sort of feeling like they're doing this for the right reasons, whatever the pain is associated with this is going to be worth it, and it takes strong leaders to be able to really convey that type of message.

Lastly I'll say strategy. We talked a little bit about the strategic alignment of EHRs of your organization, and then the question is, is there some sort of plan in place that might be documented about why EHRs are the right thing for you? And of course, I think the extent of that type of documentation would depend upon the size of the organization.

The next set of attributes is around management capacity. A lot of people talk about information management in a lot of different ways, and the meaning here for information management is how do you manage the information about what's happening in your practice, and how often do you do it? How organized is the information that you manage? If you have periodic reports that you run from your practice management system to understand how many patients have come through in the last month, what your revenue has been from those patients, and how to think about how you're managing information. Because that's an indication of how well you'll manage information coming out of the EHR.

Practice management information is obviously a little bit more focused on the quantity, and just understanding what's happening in your practice. EHR information is also focused on the quantity, but of certain types of patients, thinking about how the clinical information that you might manage would impact how you think about your practice differently, and how you might want to run it differently.

Next I'll focus on clinical and administrative staff. We all know what this means. This is whether or not you have the people, the right people who are confident and can keep them well trained, to function at the roles that you want them to function in. Do you have policies and procedures in place that really help them do what they need to do? Do you have any kind of incentive system that helps them do what they do better? A lot of people in the industry today are talking about pay-for-performance incentives. Sure, I think there is a number of us who believe that pay-for-performance will play a role in the future, especially with where CMS is headed with those issues today.

This type of incentive is a little bit different. I'm just thinking about how do you incentivize your people to do the right things for you? Very key question, especially as we get to the staff capacity necessary for EHR, because for the first time in your life, you'll have clinical information that could actually be analyzed in a much more aggressive way than practices and clinics have ever had before. Do you have any kind

of data analysis competency within your practice or clinic? Is that something that you need to own? Is that something that you could lease or outsource to another vendor? Is that something that you even care about? All of these good questions to ask yourself.

The next issue is around accountability. How much is accountability for getting things done on time, doing what you say you're going to do, fulfilling the responsibility that you have to your patients or that individuals have within their practice to each other. Accountability issues can be really important, because that dictates the follow-through of your organization to accomplish something -- in this case, EHR adoption.

And lately, finance and budget. How much do you think about budgeting for health IT or EHR separately from other budgets that you have? Are you thinking about both a capital budget and an operational budget for EHR? So how much of that have you thought about? How much of that infrastructure is built into the way that you've constructed your books to maintain your finances? All those are very important questions.

And in the last set of readiness attributes -- the last two sets -- operational capacity and technical capacity. Operational capacity is really focusing more on your processes. Again, it goes back to that question of do you know all the processes that go on in your clinic or practice? Well, this is the right time to figure out what you want those processes to be, and this is not only kind of the process of how a patient moves through your organization, but also are there protocols that you want to be using or wish were used more pervasively within your organization? So what are all the processes that you need to put in place for monitoring communication et cetera?

The next operational capacity piece is an interesting one. If you're following what's happening at the federal level, everyone is really strongly prioritizing patients in this discussion, whether we call them patients or consumers, who are all the same, right? Now patients have never been really thought of as being part of their care process in the way that people are talking about it today. How do you think about patients being part of the process? Do you want to enable some sort of e-mail communication or online scheduling or results reporting to your patients, based on the type of result that they might get back? Do you want them to have access to information before you're able to get to them? Do you want them to be more a part of the care? Do you want to provide follow-up information for patients electronically, so that they don't have to walk out the door with a thousand times over photocopied pamphlets? How do you think about how technology enables patients to interact differently with the care that you're trying to provide them? How can we make them better patients so that they're healthier, more compliant? Big question to ask yourself.

And lastly, training, I think I've beaten this into the ground, but how do you think about the training resources that you have, or that you'd like to have, for EHR adoption? And then lastly, technical capacity. Technical capacity comes in two very different, distinct categories here. One is the IT management and support, and this is your IT staffing. As we all know in health care, IT staffing is the last resource that we really have that we feel is a strong part of our organization. A number of us are really having a hard time maintaining the technical resources that we have. We might be outsourcing them, we might not have the right competencies in place, and there are a number of different stories I've heard about with IT staffing woes across the industry.

EHR will bring a different need for IT capacity to your practice or clinic. And I think for that reason, you have to ask yourself, do I have the IT resources, or do I want to pay for the IT resources, to support an EHR in my clinic or in my practice? And I think there are a lot of choices here. If you want to have your own server and your own system, then that's going to be a very costly IT staffing proposition. If you are willing to potentially compromise on some sets of functionality, or maybe not even compromise, there are those application service provider solutions out there that decrease your need to have IT staff on site and

to have expensive IT staff on site. So there are a lot of decisions that really dictate the type of system, based on the type of system that you need, how much staffing do you need around that system.

I would say the same is true of IT infrastructure. EHR obviously collects a myriad of different data types, more so than any clinic or practice has seen before in any kind of electronic format. lot of the way that most of these systems collect the information translates into some sort of potentially complicated database that might also require more network infrastructure to support the information that's flowing through the system. So the IT infrastructure needs to really skyrocket-hence the readiness for the type of EHR that you want to adopt is highly dependent upon your interest in supporting increased infrastructure and increased staffing.

Now to give you a sense of the whole process, those are all 13 readiness areas. It's a lot, and some of them might seem very fluffy. Some of them might seem highly specific. Some of them might seem hard, and the point is that all of the above, I think, are kind of natural feelings when you look at those different types of issues. But if we don't take into consideration all of those issues and how they impact each other, we might end up making a poor decision.

Just to give you a sense of how all those categories and readiness areas come together, this self-assessment is not designed to give a hard-core score at the end of the day and say, well, if you got a 78, then you're prepped and ready to adopt an EHR. It's just not designed that way. It's designed to give you feedback in a number of different ways, and to be part of the process that you'll go through to really understand why you want an EHR, when is it the right time, what do you need to prepare for it, and how do you then think about selecting the right thing for you?

We provide scores in a number of different areas. We'll provide them by each of those readiness areas that you just saw, so across the board in culture or IT infrastructure or workflow process, you would get a score that gives you a sense of how strong you are in that area. We also break it down by category within that readiness area, which says, okay, in culture, technology selection and contracting, you might be really strong. But for effective use, you might be a little bit weaker. It gives you a sense of how to think about based on the phases of implementation, how strong you might be in each of those phases.

Then of course we provide some other aggregate scores, like in the four main sections that I just went through, that are how the readiness areas are organized, or just an overall score. And we try to help interpret scores the following way: by saying that if your score is in this range, you're probably in a good situation. Or you might need some additional work, but regardless, it's worth it for you to go back on kind of a question-by-question basis, or section-by-section basis, and see where you might not have scored as highly, and go through and read what that highly-prepared column says, and understand whether that's really a goal that you want to strive for, and you want to build that type of highly-prepared situation into your plan to prepare yourself and your organization for EHR. Again, it all comes back to this is an educational tool, and it's meant to highlight as much about the success factors of readiness as possible, just to get you thinking about what's right for your organization.

This tool will be available, I think, in a couple different ways. It will be available sometime around the beginning of December for download from the TheCommunityClinic.org's Web site. This is our Web site that's sponsored by the Tide Foundation Community Clinics initiative program, but anyone who wants to could go in, register for this tool, and download this tool, again, not today, but sometime in, I would say, between the first and 15th of December, and be able to look it over and use it as one of the many tools that you use to really help define what's right for you for EHR for your organization. I also believe that NORC will be highlighting this tool at some point in the future, so you'll have a couple different avenues to get a hold of it. And again, I hope it does nothing more than just inform more about your process. I hope it doesn't necessarily make any hard core decisions for your process, but I hope it informs it.

And lastly, I'll leave you with one of my favorite thoughts, that I've seen is what does readiness really look like. It's the intersection of excitement and fear. And I think that this is very poignant for a lot of organizations who might have a very visionary leader or physician who knows that EHR is definitely the way to go at some point. It's going to be the way of the future, the way health care is practiced, but that person, or that set of people, may or may not be the people who sit down and think about, okay, why do we want it, what's going to work about it for us, and let's just think about the processes that we need to think about before we get involved in this. Those are the people who are more risk-averse, operational people, I like to say, because I am one, and this is why having that healthy team of folks who can really analyze these questions and decisions together can really make the best solution in the end.

So with that, I'll just leave you with our contact information and get to some questions. Again, this project was sponsored by two foundations in California that you see here, and managed by Object Health. If you have any additional follow-up questions about the tool or are interested in looking into the project, you'll find more information about the project at the CommunityClinic.org Web site, but feel free to contact any of us. And with that, Brian, I see a few other questions here.

BD: Yes, you do. We'll now kind of move into the question and answer phase. The one question that I saw early on had to do with the budgets. Do you see that one, Julie?

JVM: What percent of implementation budget should be allocated to training? I think there are different answers for this, depending upon literally the extent of the system that you go for. But we've seen training budgets anywhere from ten to 25 percent of a system purchase, and it's often hard to separate training budgets specifically from implementation budget, because they're often rolled together by most vendors. But I would venture to say that somewhere between ten and 25 percent seems to be kind of the norm. So I would think about training, maybe less of a percentage and more of how much effort or emphasis is put on training?

I think that there are different phases to training, and I notice that you say here in your question, not necessarily ongoing training. So I think initial training has come to ten to 25 percent hat I quote. Again, depends upon ASP versus larger, in-flow vendor and what those costs are, but training is something that you should think about as having everyone trained within your organization, having a set of super-users, which is probably a term that a lot of you have heard of, trained at an even higher level, so that they can almost support the application, so that you have one or more people within your organization that are kind of the go-tos. They're not necessarily a technical help desk but they're a user, and they are the go-tos for when anybody has a question that you don't necessarily need to go to the help desk for, but you really want somebody who can explain it to you in terms of how your clinic or practice is using that technology.

So think about training in those two categories, and then think about it as initial training, some short-term follow-up training within the first few months after the system's installed, and then what your timeline for ongoing training is, keeping in mind that with every new person who comes on board, you should have some sort of training program in place that professionally trains that person. And when I say professionally, I don't mean that it has to be the vendor training that person, but you want to have your super-user or your vendor spend quality time with that person, bringing then up to speed, so that they don't become the liability for the person next to them, and then start to drag down the system for a few weeks.

I think there are different ways to think about training that are not necessarily percent of purchase, but ways in which you should be thinking about buying that training. Hope that helps.

I have a question here from a DG saying, will anyone be talking about HIPAA and PHR issues, with sharing the EHR with RIOs? And that's not part of my discussion today. However, I think that the PHR issues around EHR use in general, whether you are linked into a RIO or your application is shared across a couple organizations, or you're obviously using information from a laboratory or other organization that

is not your own information, there are clearly security and privacy concerns around the policies and procedures that your organization is using, versus another organization. And a lot of those types of security and privacy discussions are again going on at the federal level, focused on trying to figure out from state-to-state or from organization-to-organization how those practices differ and could be streamlined.

But I think your business practices around who has access to information, in terms of role-based access, should your administrative person have the same level of access as the nurse or a physician? How do you think about what the policies and procedures for that should be? A lot of those are really come down to configuration questions when you're implementing your EHR. So without getting into the real discussion, I'll leave it at that.

I have another question here about what do I mean by physician leadership. It's a tough question out of context, but I will say that no, physician leadership is more of a concept that I think maybe has meaning in a clinic setting where physicians are not the natural leaders of the organization, like they are in private practice. So if this is coming from a private practitioner, then I can see why you might be asking the question, but we're looking at physician leadership within clinics as being a very important component to express not just physician needs. I think sometimes physician leadership is really a misnomer, but physician needs as well as other clinician needs, for not only technology but the processes that go on within a clinic or a health care setting. And if I didn't answer that question properly, feel free to raise your hand and we can talk more about it.

There's a few questions here about the Excel file, so I think identify where that Excel file will be available, and again, it won't be available until a little bit closer to December 1 or December 15, again at CommunityClinics.org.

Next question is did I mention an article by Bob Miller. So the reference is in the Health Affairs publication that came out, it's the September/October 2005 Health Affairs publication, and actually this entire Health Affairs is dedicated to health information technology, this specific issue. It's Volume 14, Number 5, and it has a great article by Bob Miller, focusing solely on the private practice cost/benefit equation around EHRs. But it also has a lot of amazing articles that are really focusing on this question of RIOs and what they are and what they should be, how should the National Health Information Network be designed, things like that. If you're really into this whole health IT question, definitely pursue the September/October version of the Health Affairs.

Another question here, what are some of the talking points for senior leadership on the value of free training shortly after go-live? In ten years of consulting, I've never seen retraining done. I would agree with that. I think part of the method to the madness here is that these systems are complicated, and unfortunately, probably more complicated than they need to be, in a lot of cases, but they are complicated. So the value of retraining, I don't know that Bob Miller and other researchers have actually tried to document the quantifiable value of retraining. I think this is still kind of a theoretical, kind of qualitative value of retraining, but if we look at the complication of not only how complex the products are but also the extent of process redesign or process change that will likely happen by implementing EHRs, it makes sense that there are retraining needs that have to happen.

And I think the issue I've seen and I'd be interested in the comment here, the issue that I've seen over the years is that a lot of organizations wait for their clinicians, their staff, et cetera, to raise their hand and ask questions, instead of developing a more proactive model to try to intervene and address those issues that might be brewing, that we don't really know are happening out there, but really might be slowing down the system, or slowing down people's efficiency, or creating ill will in some way, because they haven't raised their hand to say I don't know, and I don't get it. Although there's not a quantitative value around this, I think that there is a lot of logic to trying to be proactive in the early stages, after implementation, to ensure that people really, truly get it. I hope that helps.

One other question is, where can I get a list of best of breed ASP, EHR products for CHCs? If you consult CommunityClinics.org and you look for information around this California Community Clinic EHR Assessment and Readiness Project, we produced, in January of 2005, a list of vendors who expressed interest in working with community health centers, and did an analysis of their product along a number of different criteria to really help CHCs understand whether or not that product met what their documented needs were in the state of California. I'll tell you that since this was produced in January, it's already well out of date. We've had vendors purchase other vendors, consolidation in the industry and new functionality comes out almost every quarter from some of the stronger vendors. So a lot of this is already out of date, but I would definitely consult that as some of the baseline for how to think about it.

There are also a number of different resources within the industry that focus on just EHR analysis in general. In addition to what CCHIP is coming out with, there's the AC group, there's Physician EHR, I think, is doing some work in this area as well. So there are a lot of different areas you can consult, but there are not a lot of lists or resources that focus on clinics specifically. But again, I think if you understand just the baseline of how we view clinics to be a little bit different, in terms of operation health management, consulting any EHR list like that, and then really looking at that to really understand how the functionality differs could really answer your question.

Question, will I contact you via e-mail and the tools that are available? Maybe I can pass on that with Brian and figure out how we can do that.

BD: Because we might be able to work something out since AHRQ has the e-mail addresses of these folks and you have the toolkit. We'll figure out a way to bring the two together, and that's something else you might want to talk about maybe, how you folks at Community Clinic or at Object Health kind of use AHRQ as a resource, maybe for accessing information on some of this stuff, because I know that at least at AHRQ, we plan on our Web site next year, to put up links to a lot of the stuff that the CommunityClinics.org folks have been working on as well as a number of other EHR tools and resources. Maybe you want to talk about a minute or two, about how you currently use AHRQ as a resource.

JVM: Sure. I think in terms of how this project has worked with AHRQ, or plans on working with AHRQ, we have done a lot of information-sharing back and forth to let AHRQ know what's happening in California, and specifically in this project, and also sharing the toolsets like the one that I referred to here today, to make it more widely available to users outside of California and users outside of the community health center world. So I think there's a good back-and-forth. We've also tried to use the tools to inform some of what AHRQ has been working on, to really understand what some of the capacity needs are for practices and clinics in the field.

We'll be working with NORC specifically on providing web links to the products that I mentioned not just products, but to the content or pieces that we talked about today, that are currently housed or will be housed on the CommunityClinics.org site. So it seems like somewhere in the next few months, that might be a reality at NORC. Is that right, Brian?

BD: Absolutely and we should mention that even though she refers to NORC, which is the N-O-R-C of the University of Chicago, really we're a contractor in providing services for the Agency for Healthcare Research and Quality. So as an AHRQ subcontractor, we're making these linkages to bring these resources and tools to the AHRQ Web site.

JVM: My apologies.

BD: No, you're perfectly fine. I think there's sometimes some confusion around that.

JVM: Then there's a last question here about who I am, since you joined the call late. I'll just repeat, for anyone who joined the call late, that I work with a group called Object Health, which is a consulting group in California that's been working primarily with foundations and not-for-profit health care organizations as well as private practices to really understand strategies around readiness for health IT. And also working in this whole world of RIO development and what the impact of that movement means to IT adoption at the organizational level. Hopefully that helps whoever asked that question.

BD: We'll take this one last question, and I think we'll be done. L, are you there?

L; I'm here. Hey, Julie, actually you just answered my question by stating your name. I didn't know what your name was. You said you were with Object Health. So thank you, this was a very helpful call.

JVM: Julie Murchinson. Thanks so much, I'm glad you got some use out of it.

BD: Meryl, do you want to wrap up?

MB: On behalf of the National Resource Center, the AHRQ National Resource Center, first I'd like to thank Julie very, very much for providing us with really insightful information, very comprehensive overview and presentation, and certainly want to thank all the participants for spending this time with us this afternoon. We would really appreciate hearing back from everyone I guess, in terms of feedback about this presentation, and suggestions for future.

So Julie, I would like to just ask, but one of the things I know that I was dying to ask, but I know we're out of time, is part of the process trying to help people figure out how they can help themselves capture and document the costs of current paper-based or manual processes and systems, so that you can help document and make the case to go to an electronic system. You talked a lot about readiness, and I think perhaps another session if people think it's valuable would be to really talk about how to capture those costs and track the benefits.

JVM: I would definitely agree that a session focused on how to make the business case for EHR is pretty important, because I think we often don't necessarily articulate every single process that's currently going on and bogging down our system manually today, and how to think about whether it's value, in an electronic world. So that's a great topic.

MB: And then how to document it and capture it. It's really complicated in some cases, but very important. So Brian, I'd like to thank you also for your help and the other staff at the NRC for making this possible.